00h00t"595h8960

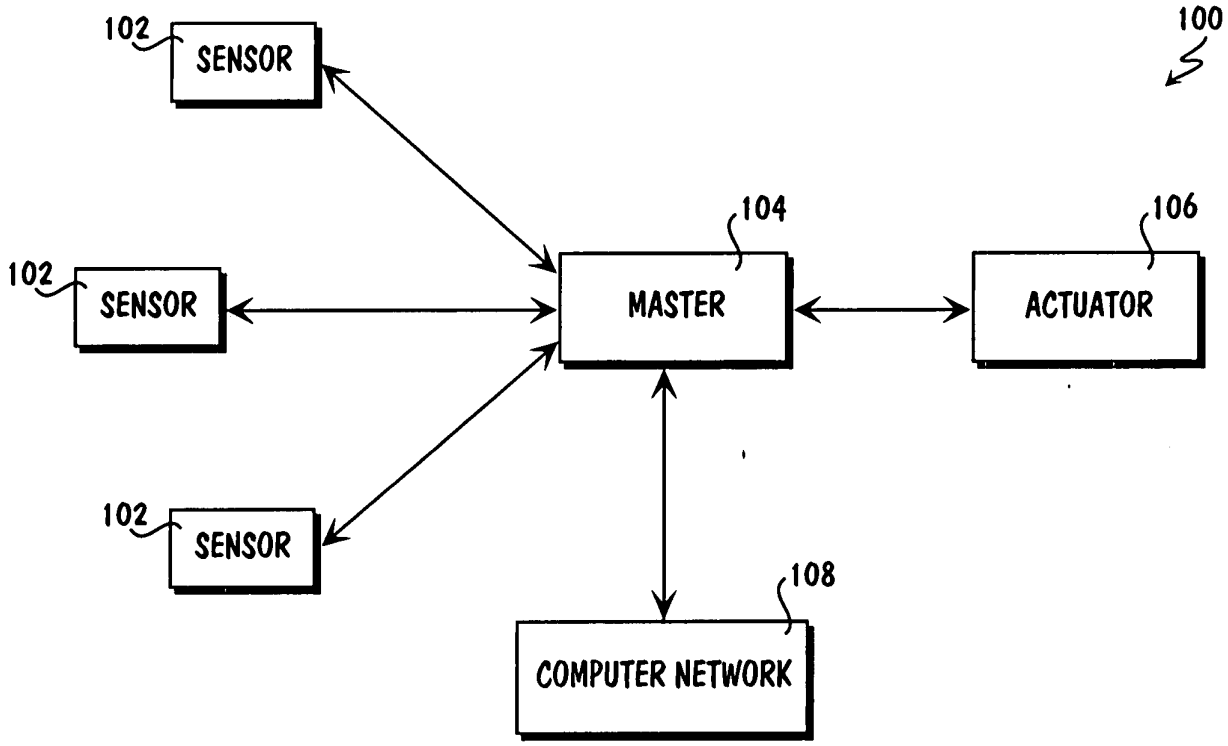
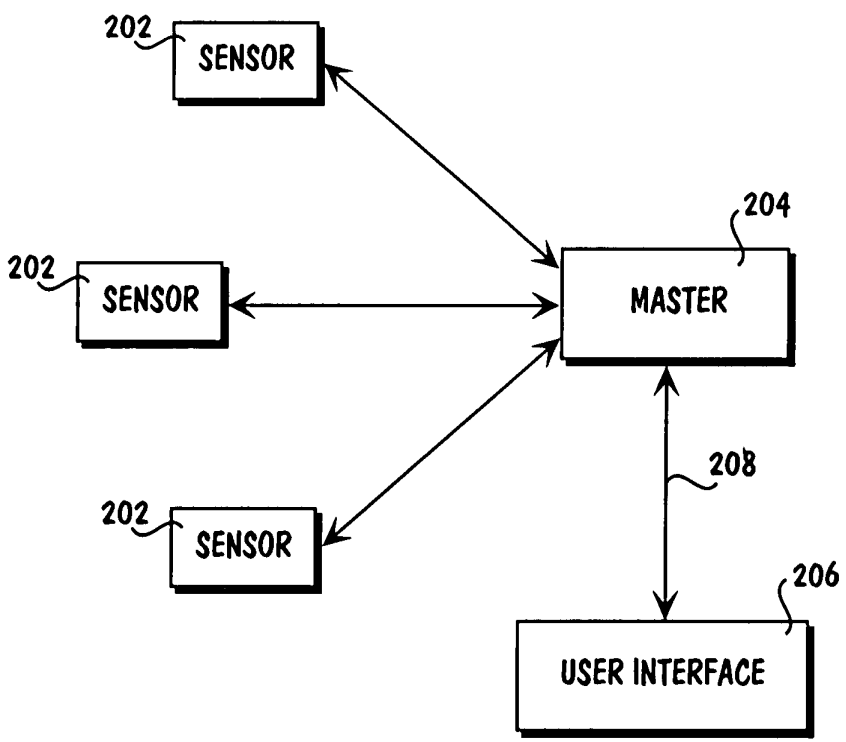


FIG. 1 (Prior Art)

00h00t"595h896g



200

FIG. 2 (Prior Art)

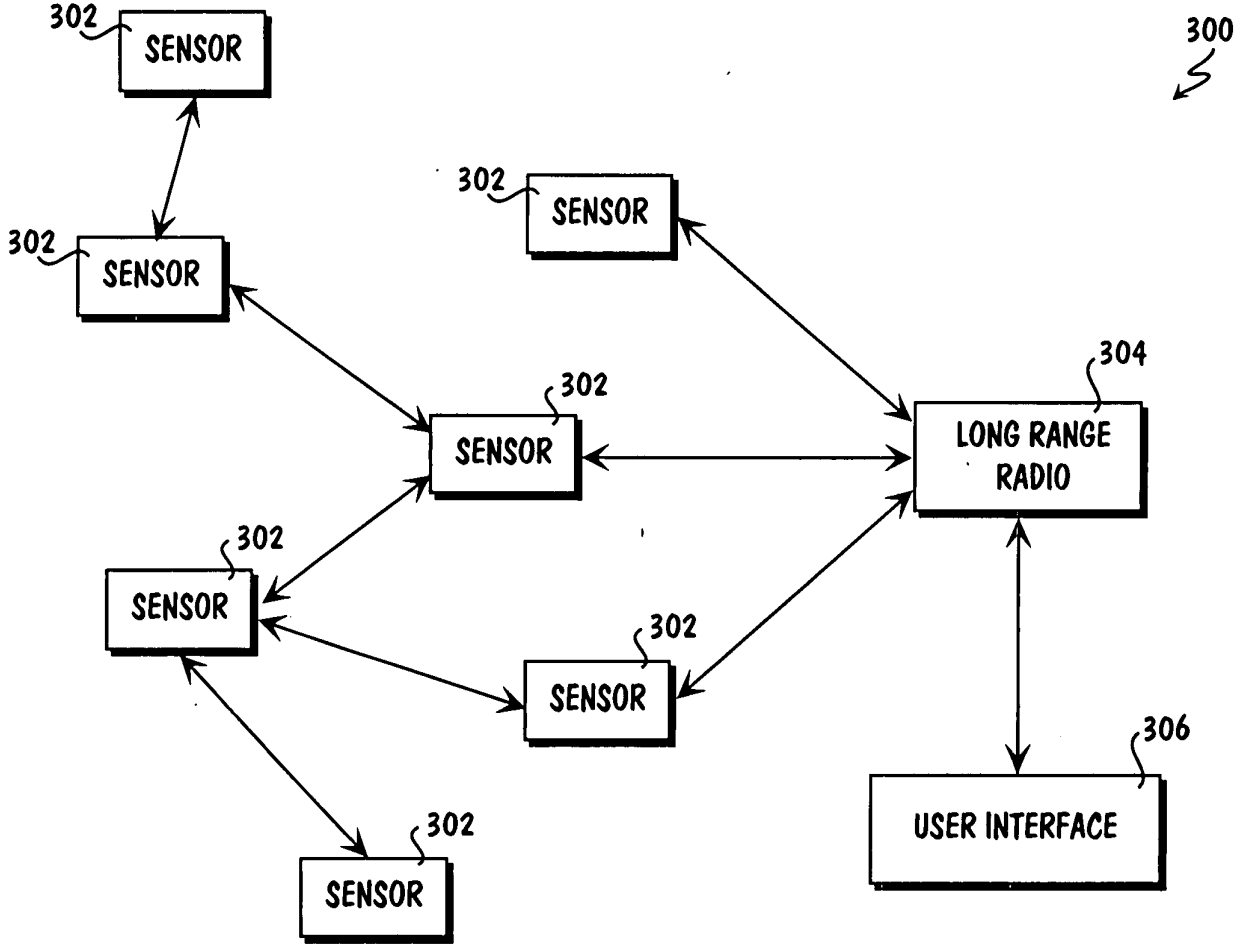


FIG. 3 (Prior Art)

00h00T"595h3960

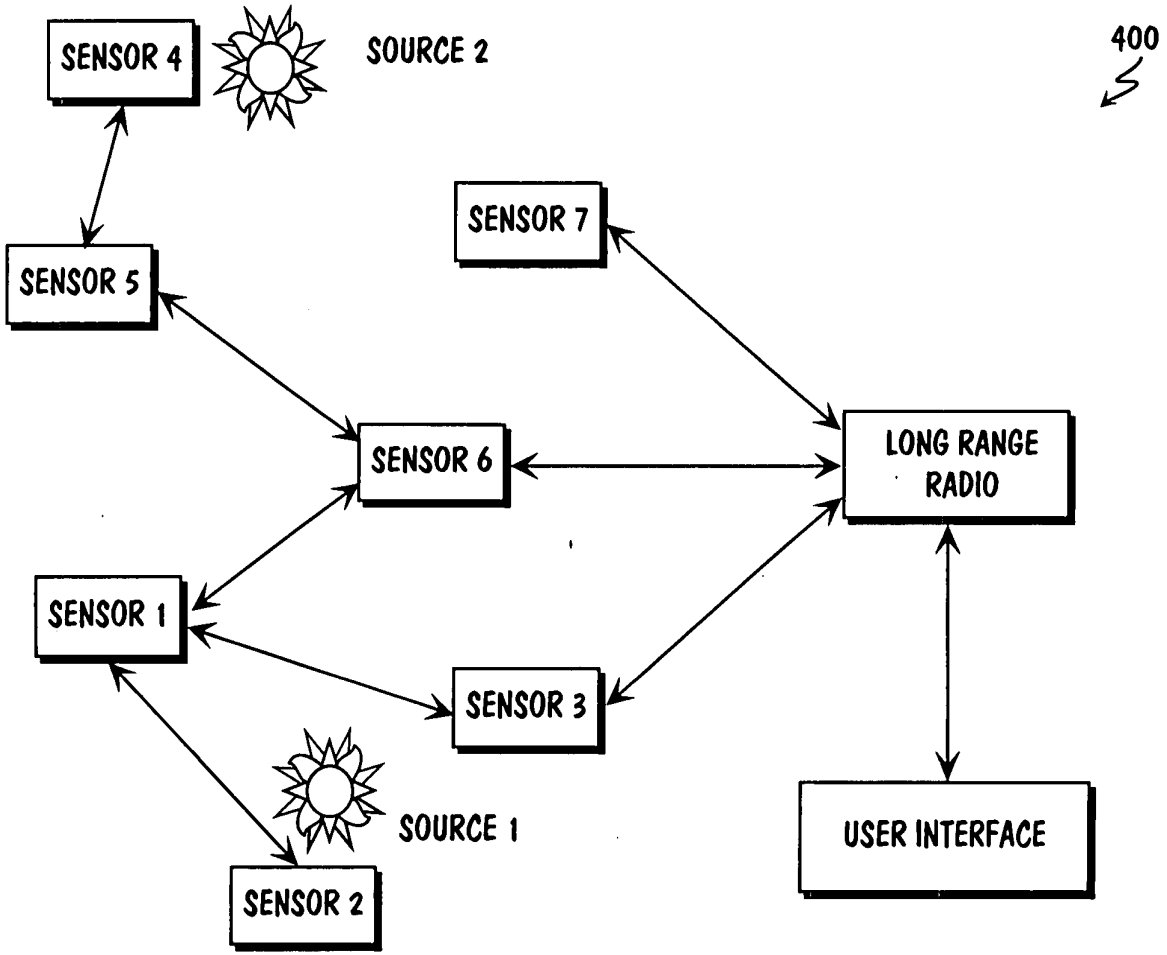


FIG. 4 (Prior Art)

00h00T"595h8960

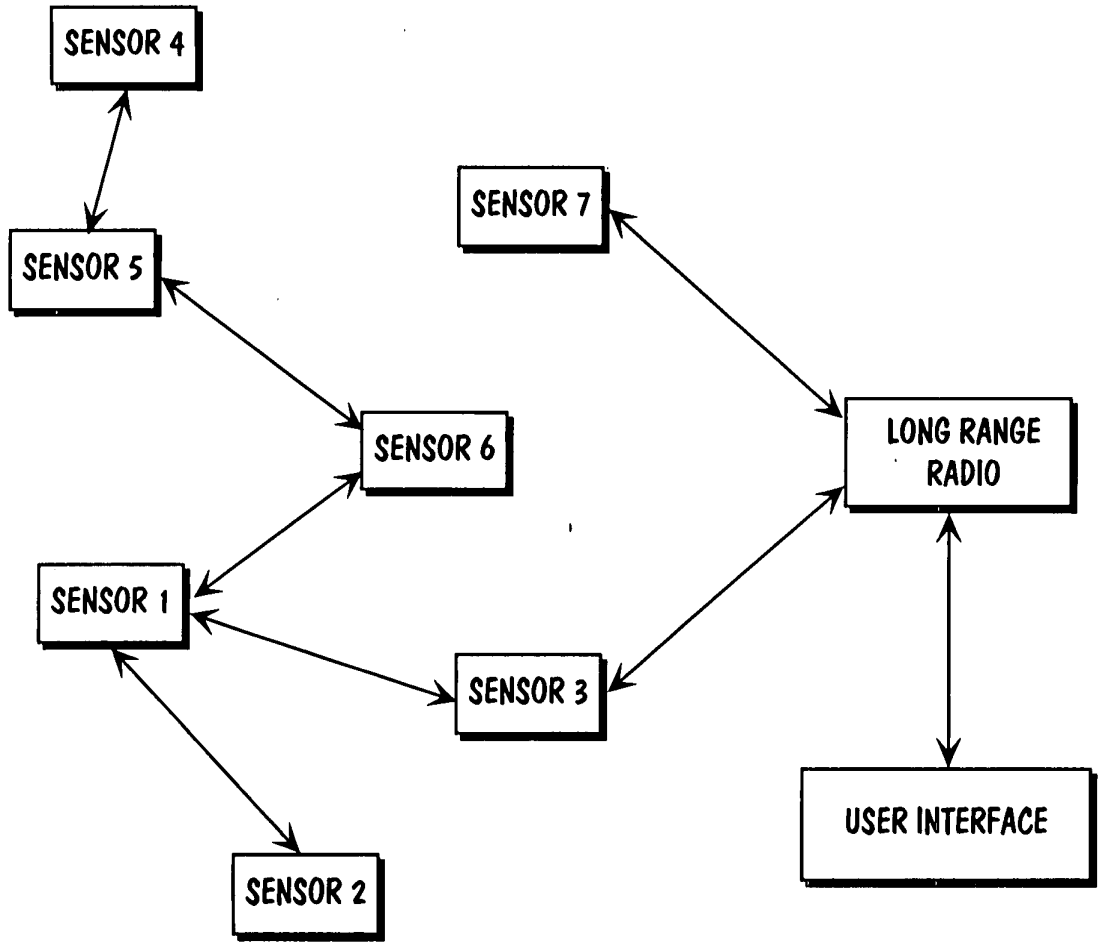


FIG. 5 (Prior Art)

00h0Ot" 595h8960

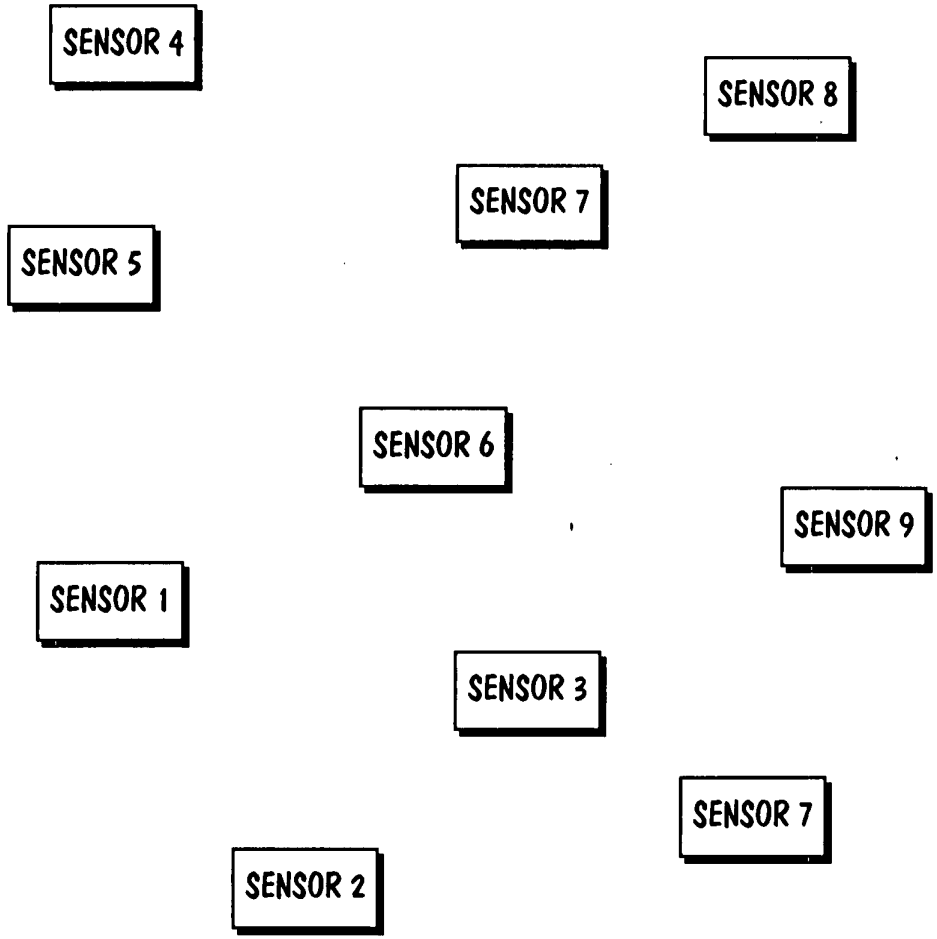


FIG. 6 (Prior Art)

00h00f" 995h8960

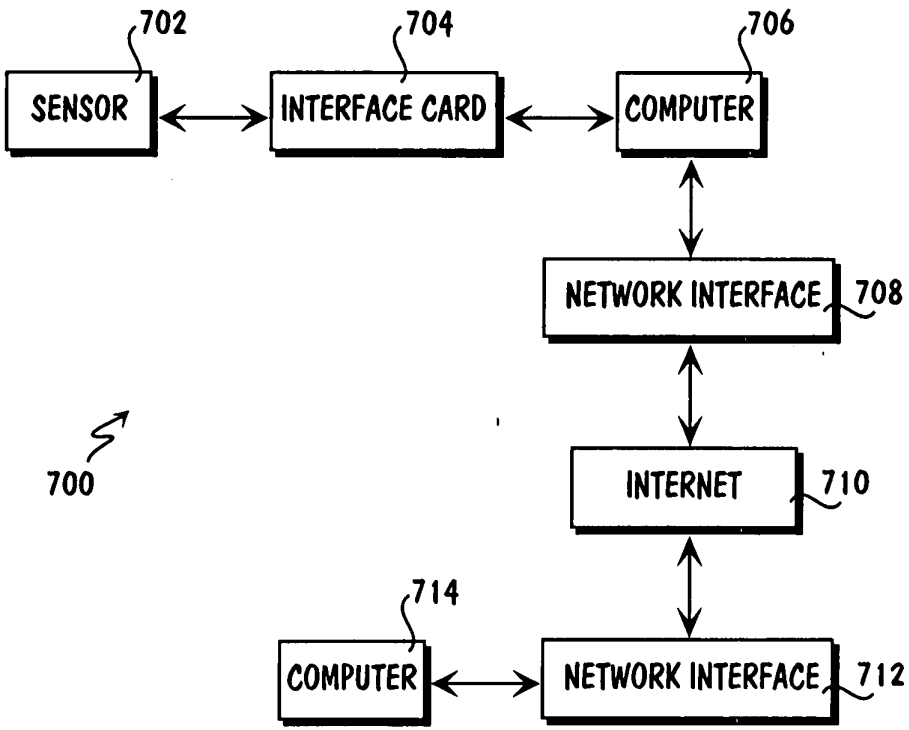


FIG. 7 (Prior Art)

00h00f"595h8960

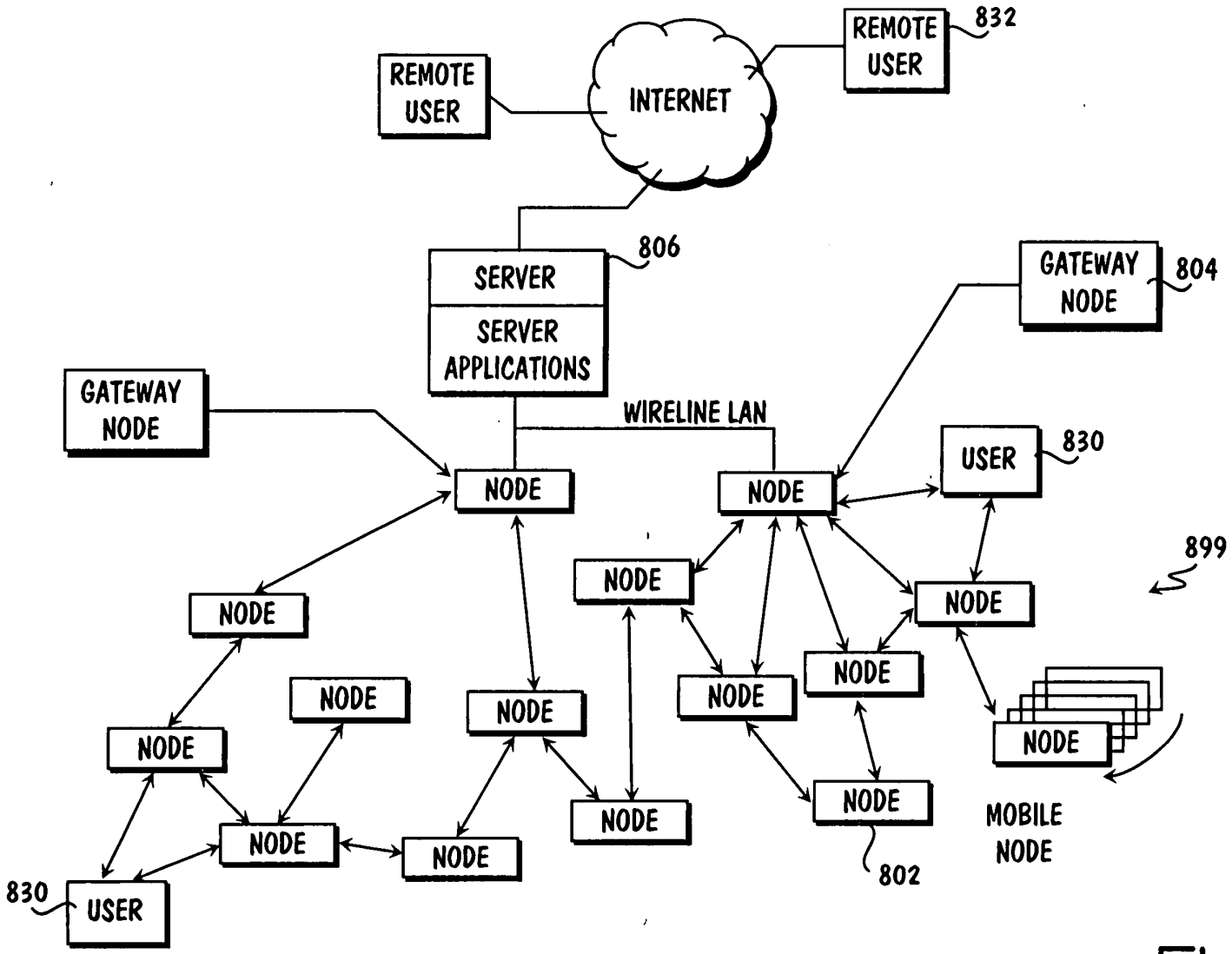


FIG. 8

00h00f"595h8960

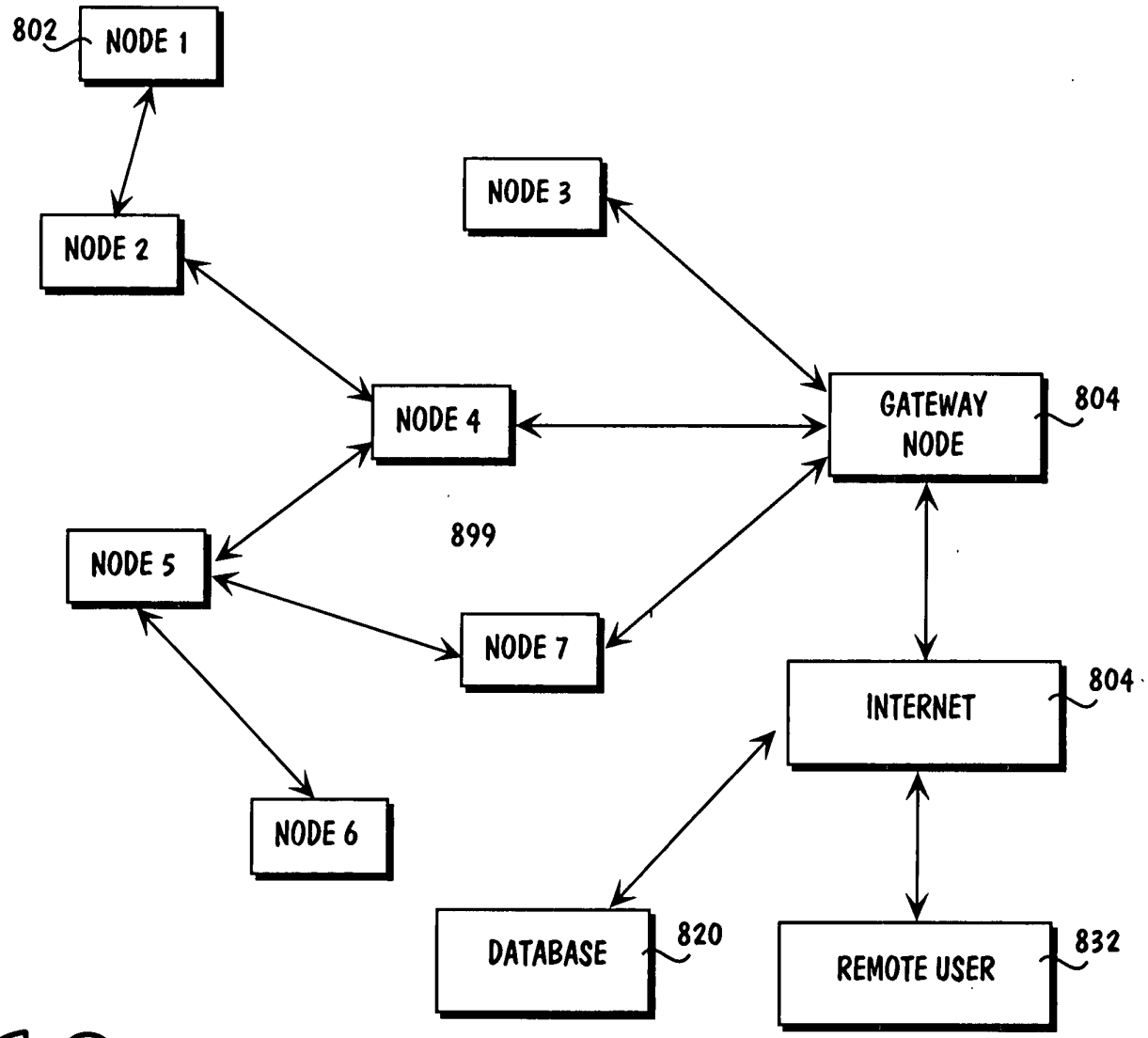


FIG. 9

09684565 - 100400

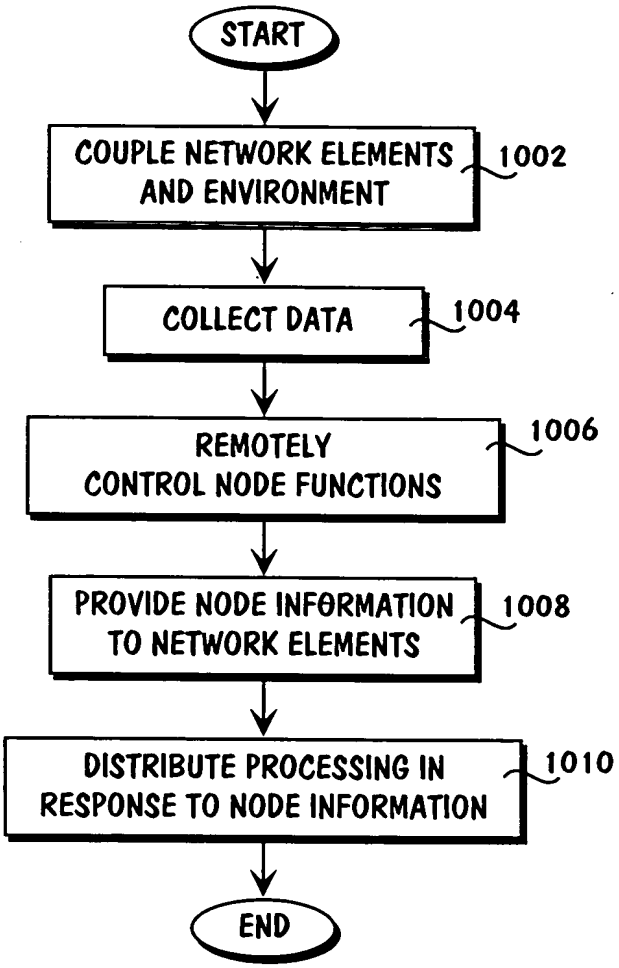


FIG. 10

00h00T" 595h8960

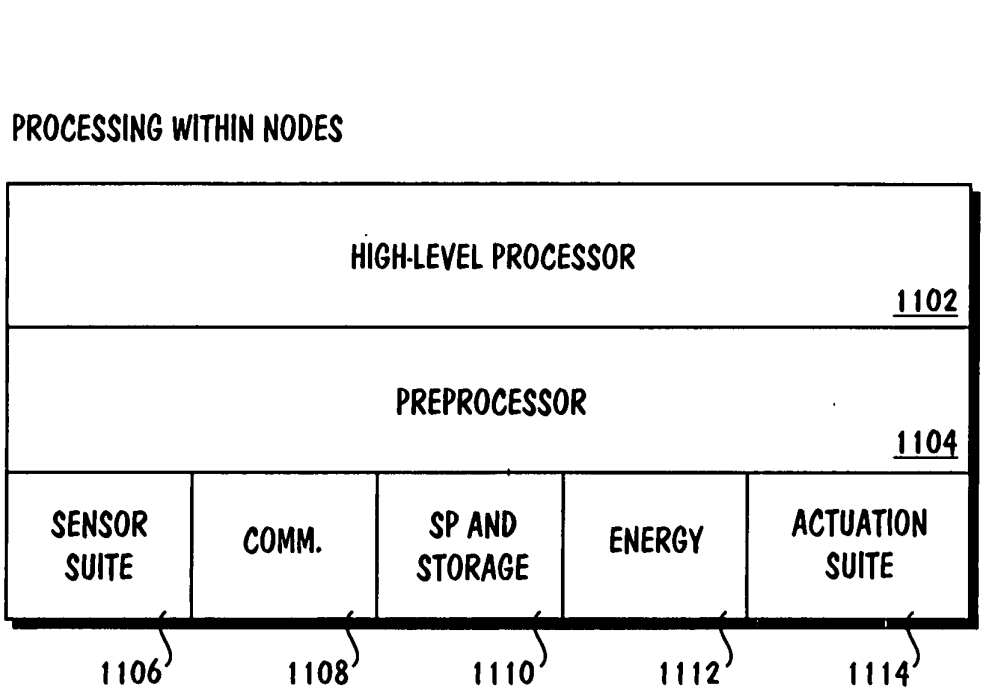


FIG. 11

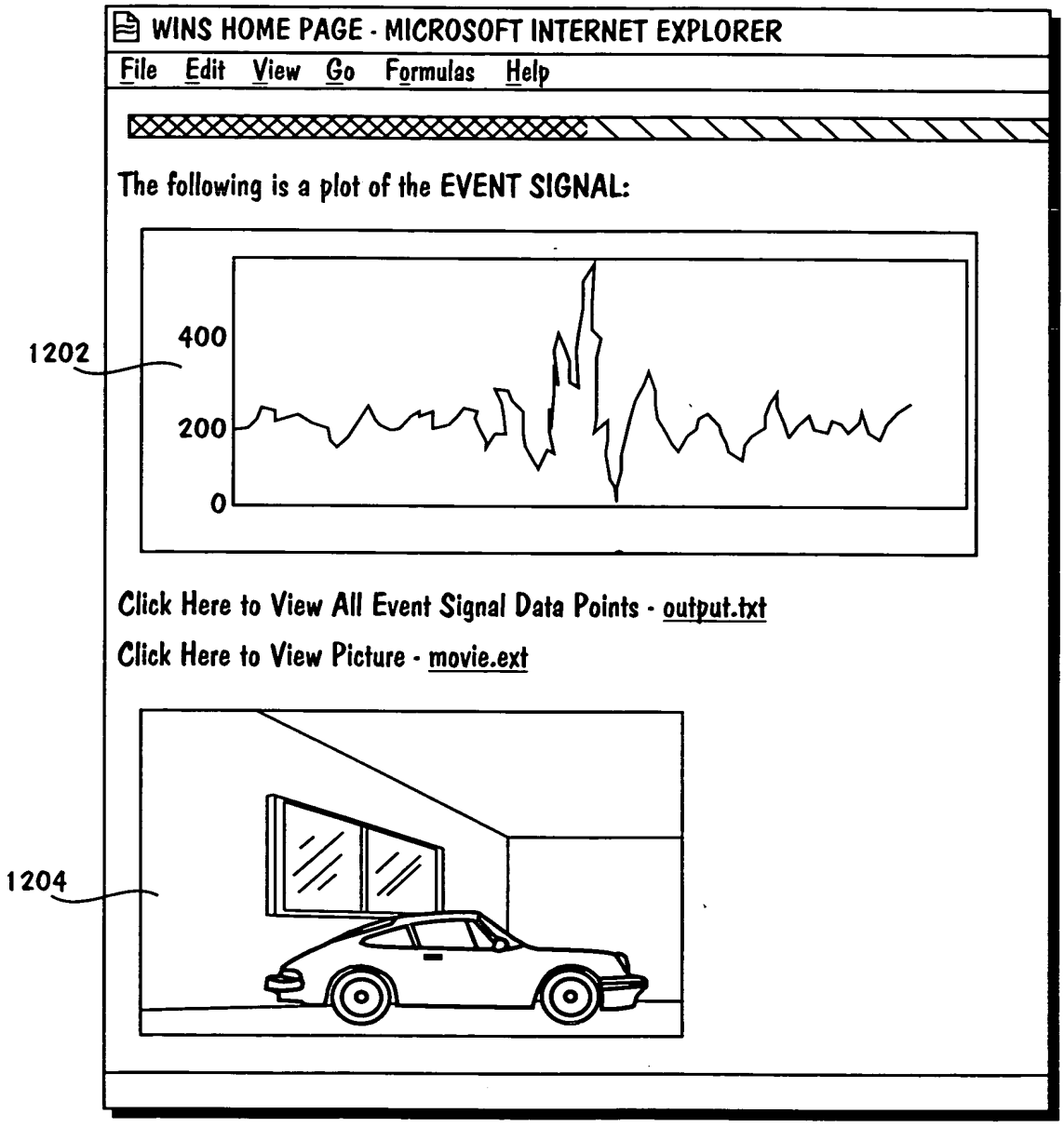

WINS HOME PAGE - MICROSOFT INTERNET EXPLORER
File Edit View Go Formulas Help
The following is a plot of the EVENT SIGNAL:
400
200
0
1202
Click Here to View All Event Signal Data Points - output.txt
Click Here to View Picture - movie.ext
1204

FIG. 12

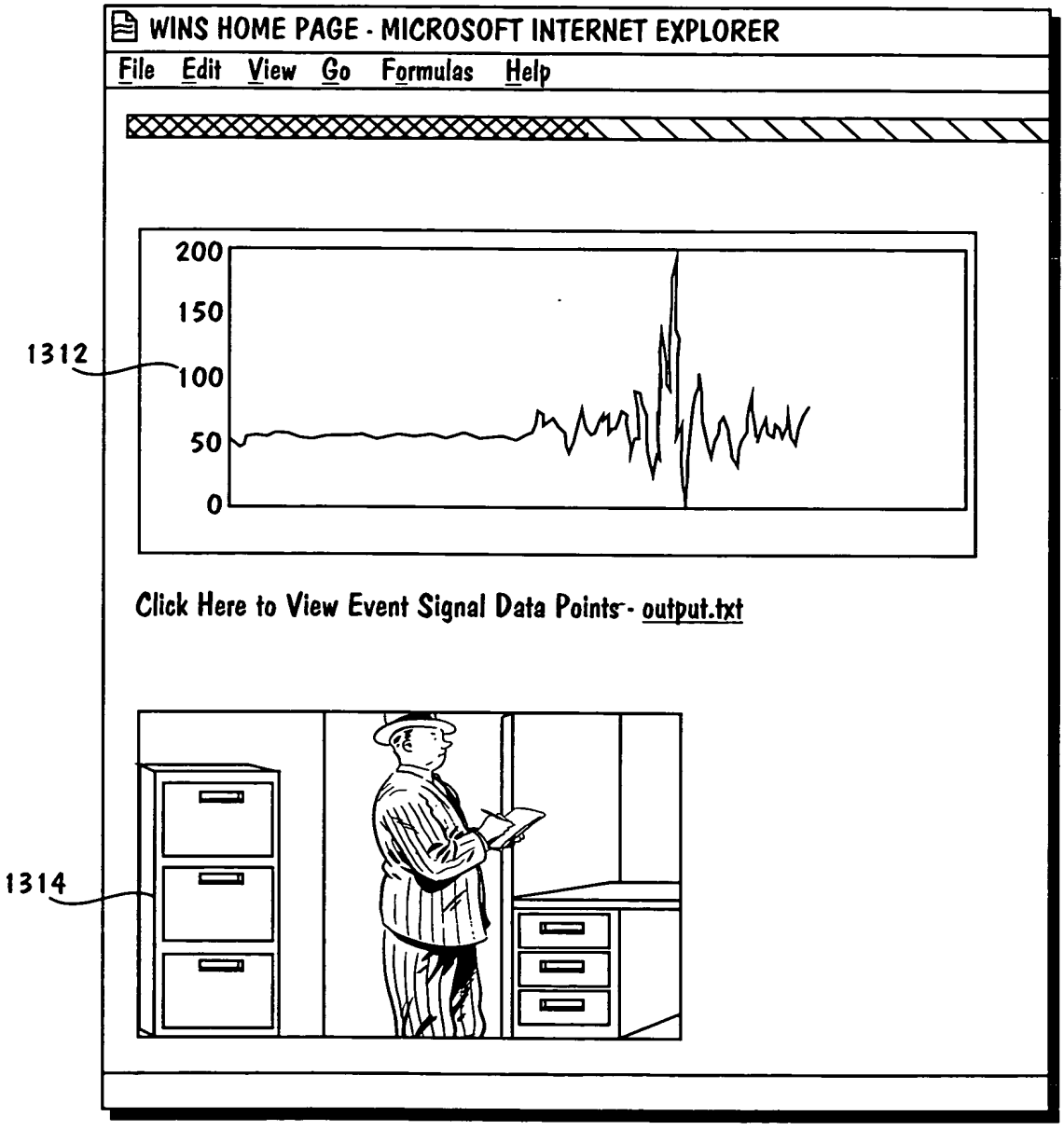

WINS HOME PAGE - MICROSOFT INTERNET EXPLORER
File Edit View Go Formulas Help
200
150
100
50
0
1312
Click Here to View Event Signal Data Points - output.txt
1314

FIG. 13

00h00t"595h8960

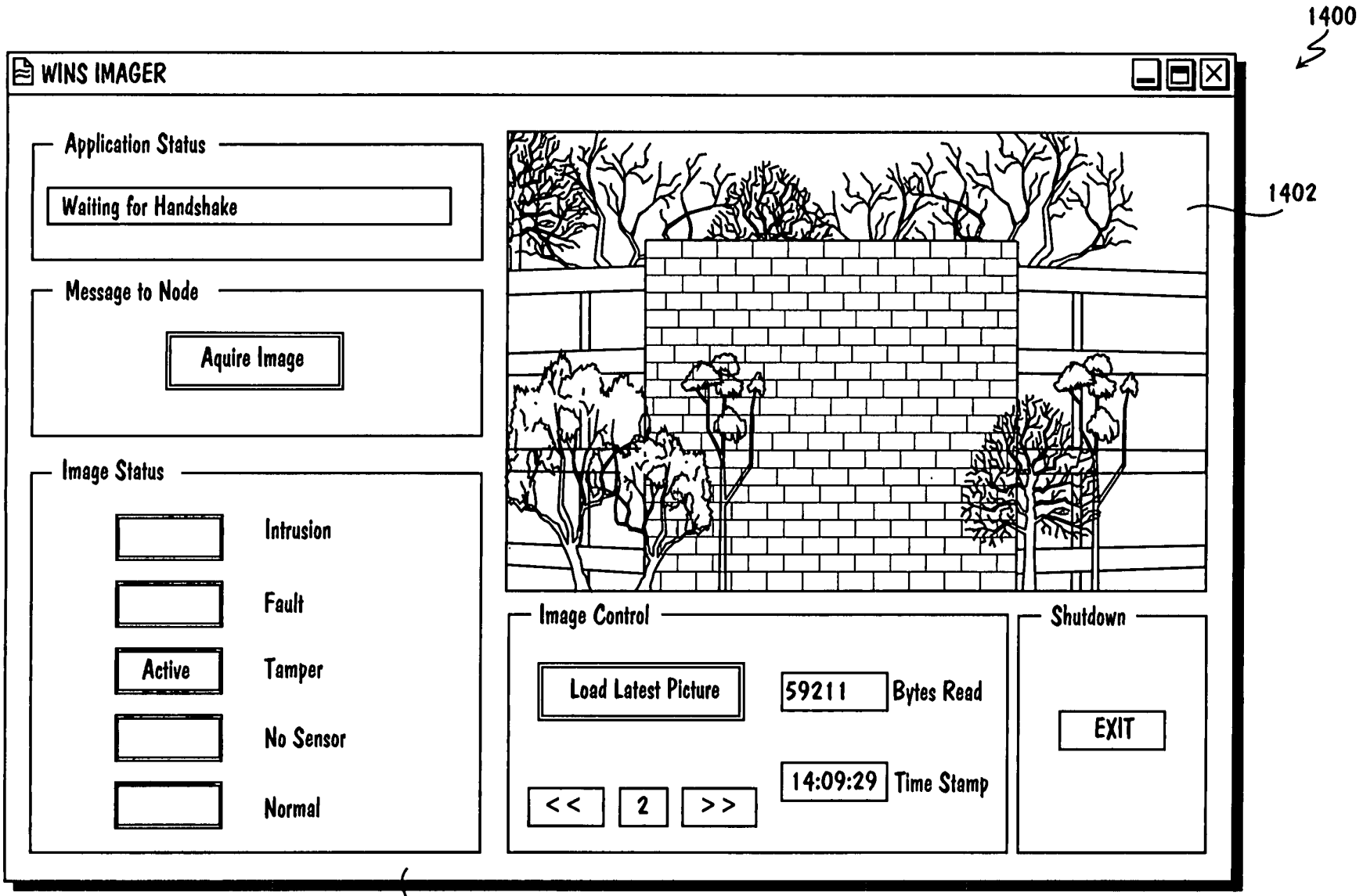


FIG. 14

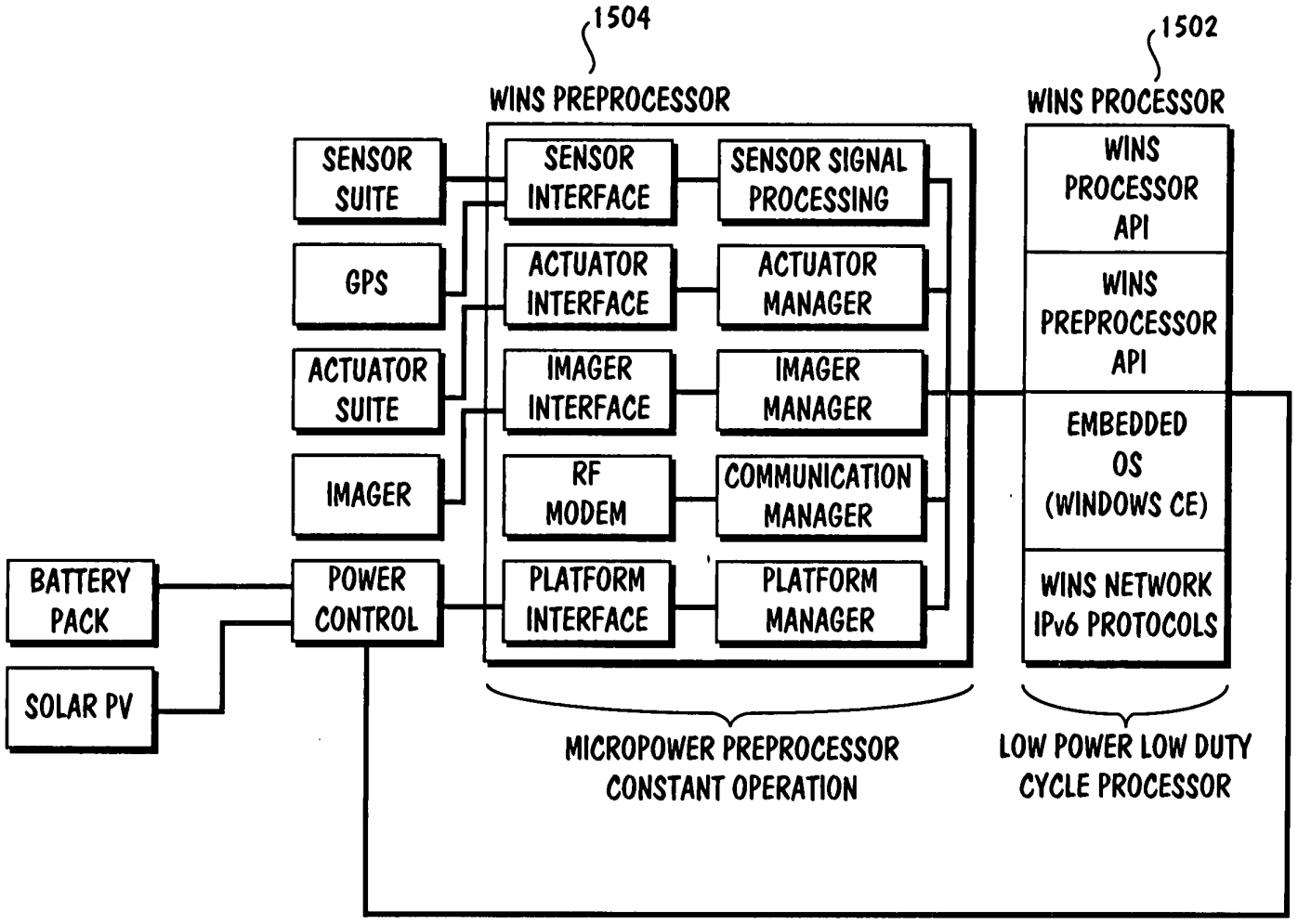

1504
WINS PREPROCESSOR
1502
WINS PROCESSOR
SENSOR SUITE
GPS
ACTUATOR SUITE
IMAGER
BATTERY PACK
SOLAR PV
POWER CONTROL
SENSOR INTERFACE
ACTUATOR INTERFACE
IMAGER INTERFACE
RF MODEM
PLATFORM INTERFACE
SENSOR SIGNAL PROCESSING
ACTUATOR MANAGER
IMAGER MANAGER
COMMUNICATION MANAGER
PLATFORM MANAGER
WINS PROCESSOR API
WINS PREPROCESSOR API
EMBEDDED OS (WINDOWS CE)
WINS NETWORK IPv6 PROTOCOLS
MICROPOWER PREPROCESSOR CONSTANT OPERATION
LOW POWER LOW DUTY CYCLE PROCESSOR

FIG. 15

00h00f"595h3960

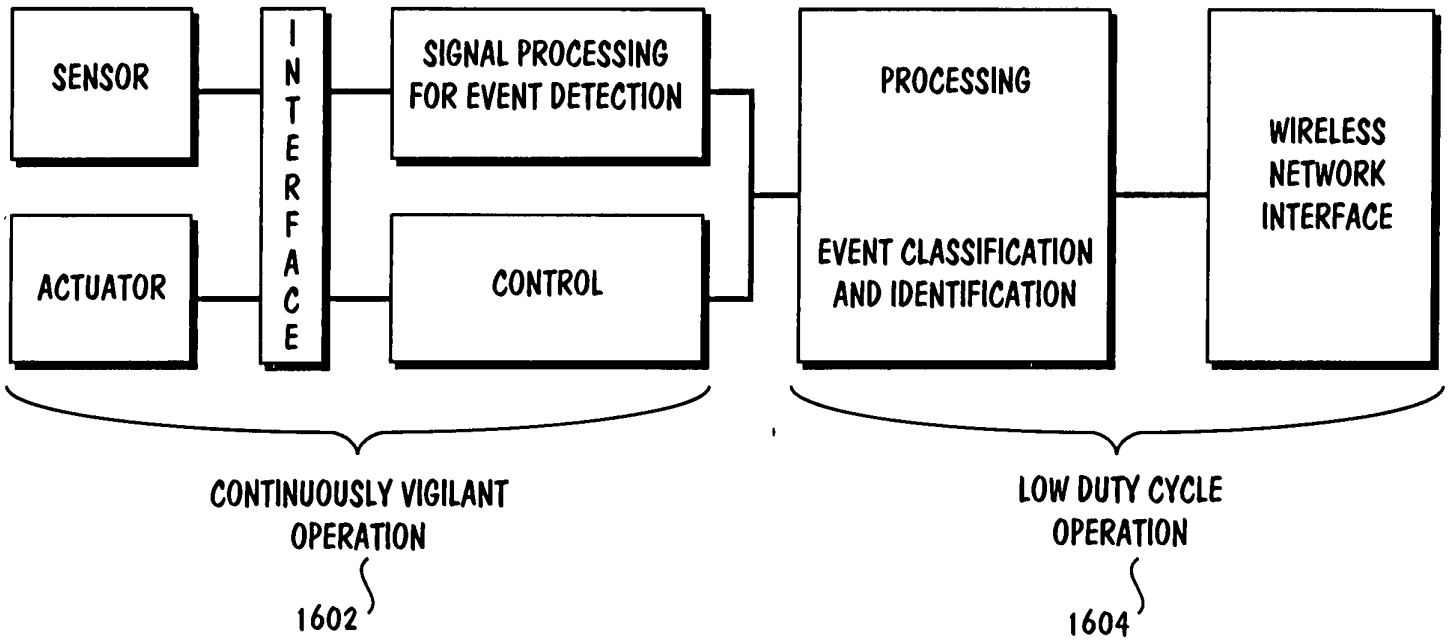


FIG. 16

00h00f" 595h8960

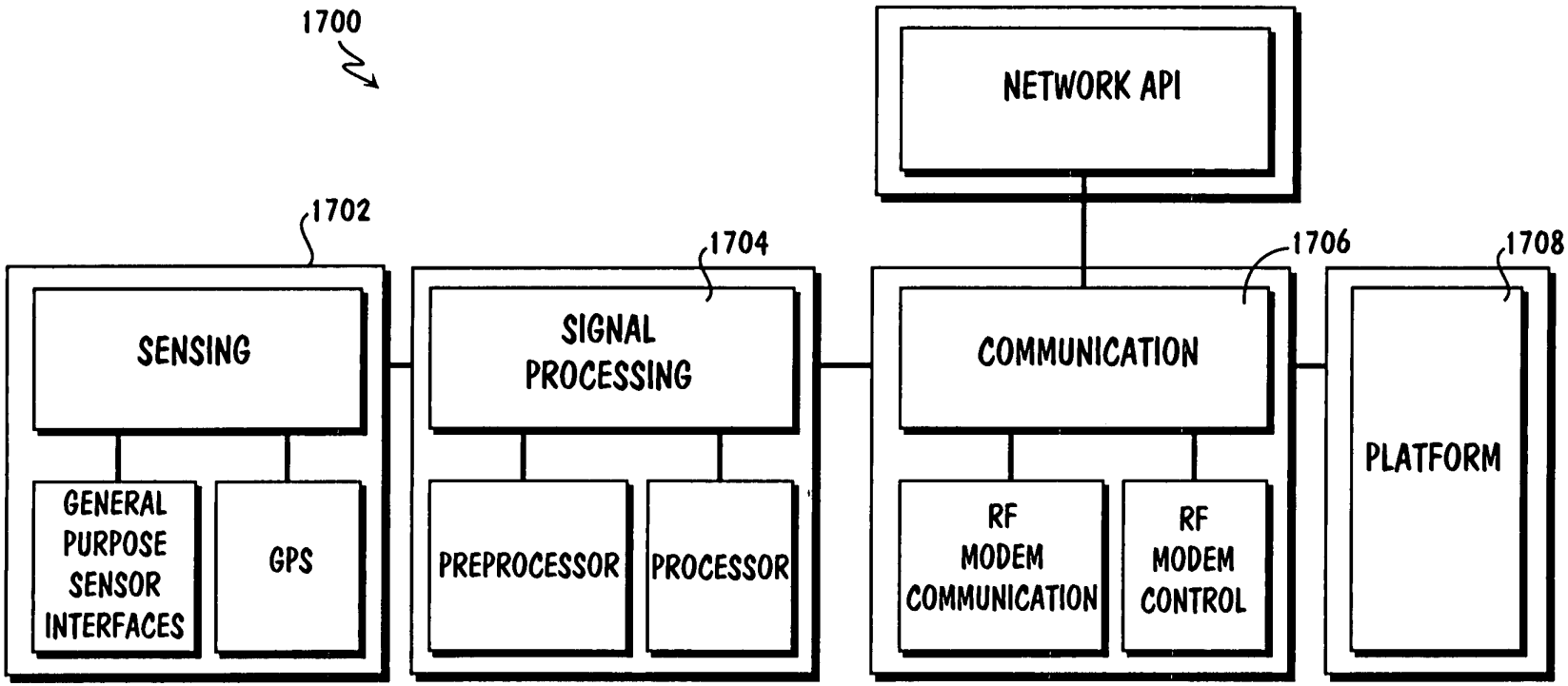


FIG. 17

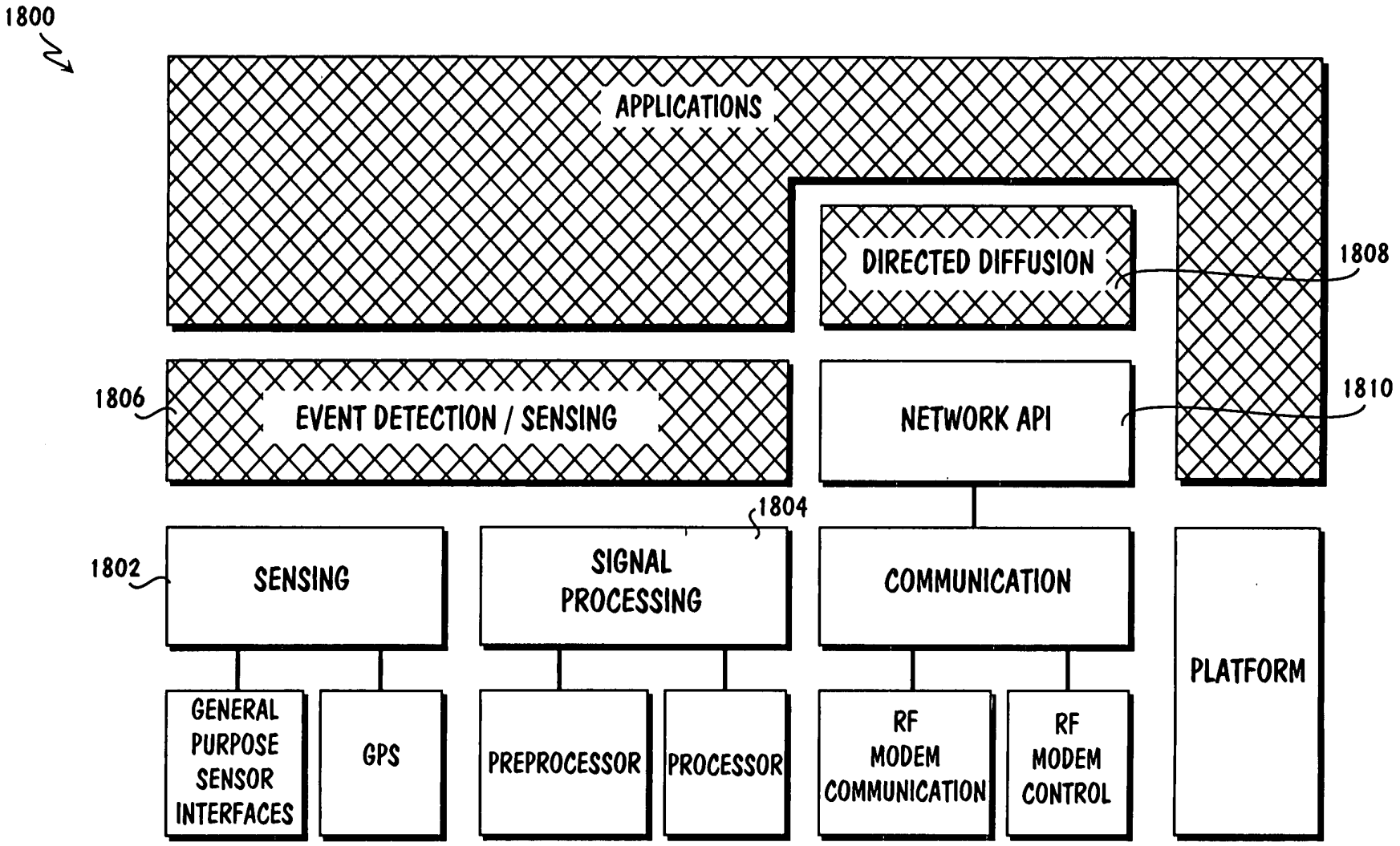

1800
APPLICATIONS
DIRECTED DIFFUSION
1808
1806
EVENT DETECTION / SENSING
NETWORK API
1810
1804
1802
SENSING
SIGNAL PROCESSING
COMMUNICATION
PLATFORM
GENERAL PURPOSE SENSOR INTERFACES
GPS
PREPROCESSOR
PROCESSOR
RF MODEM COMMUNICATION
RF MODEM CONTROL

FIG. 18

00h00T" 595h8960

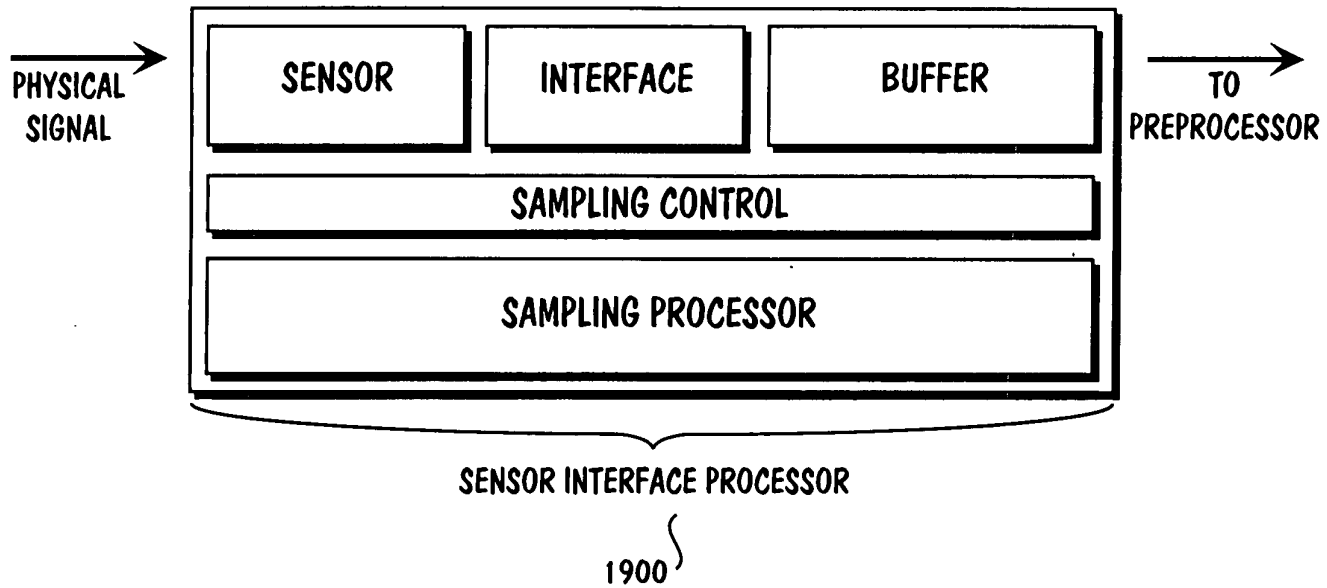


FIG. 19

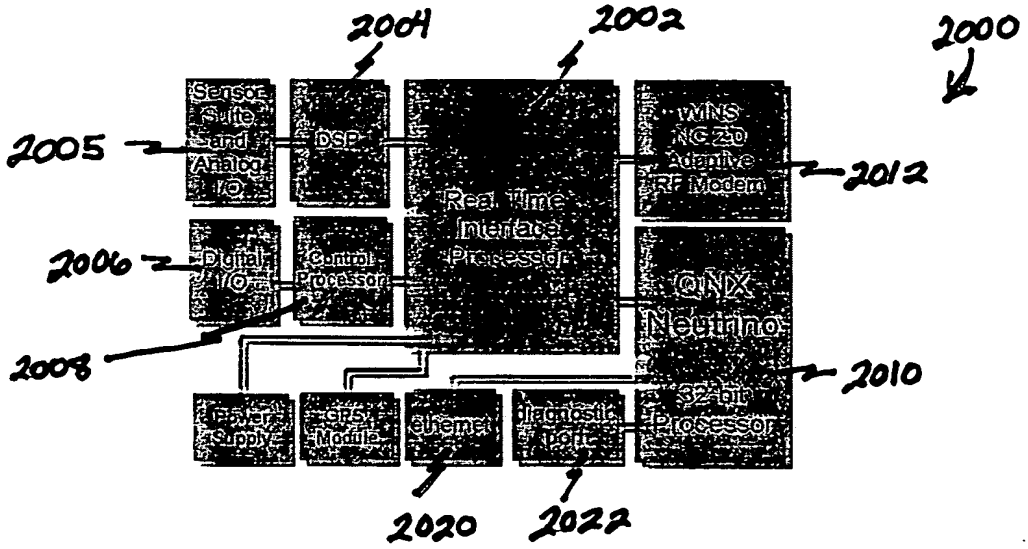
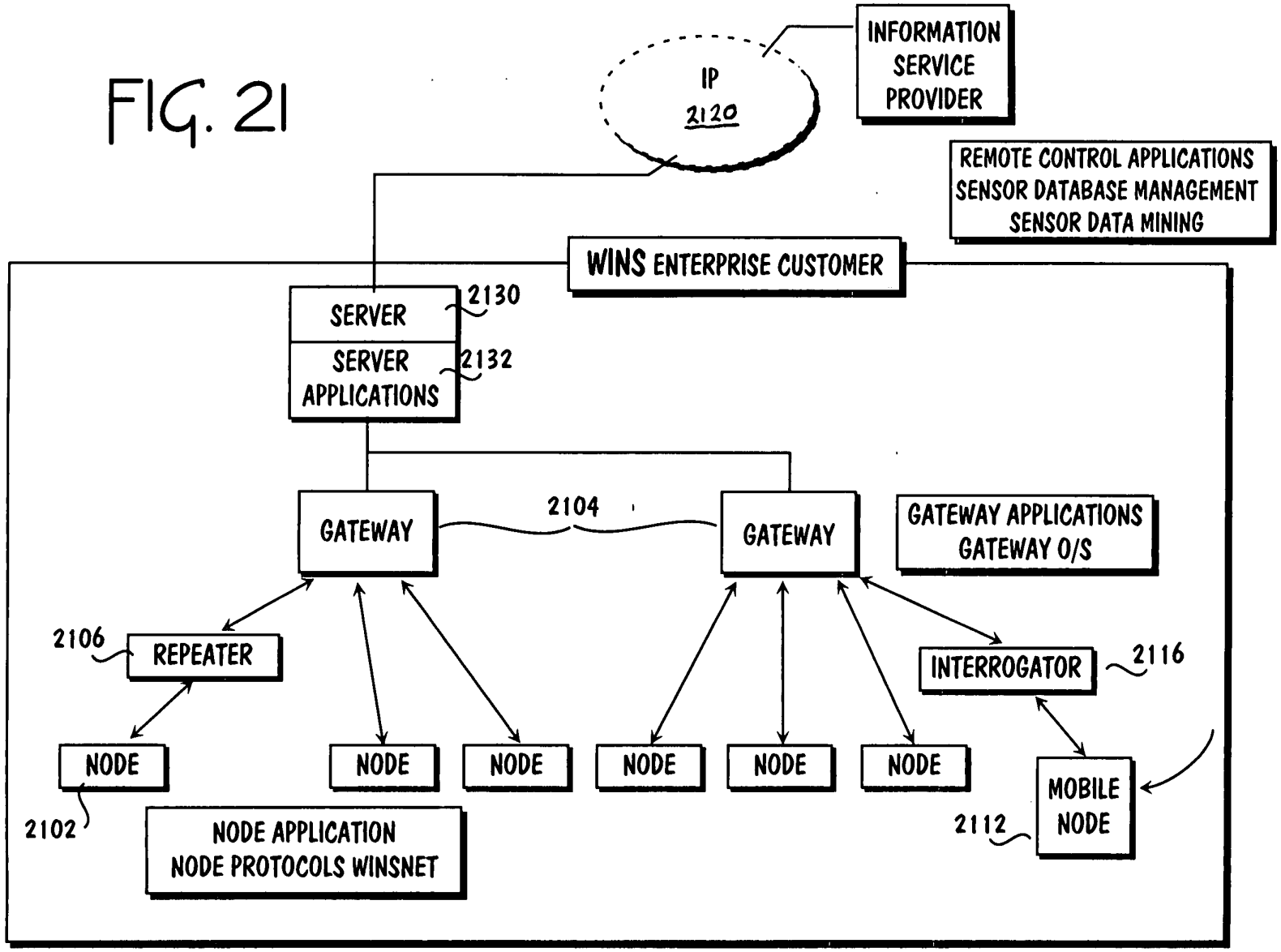


FIGURE 20

D9684555-100400

DO NOT SCAN 8960

FIG. 21



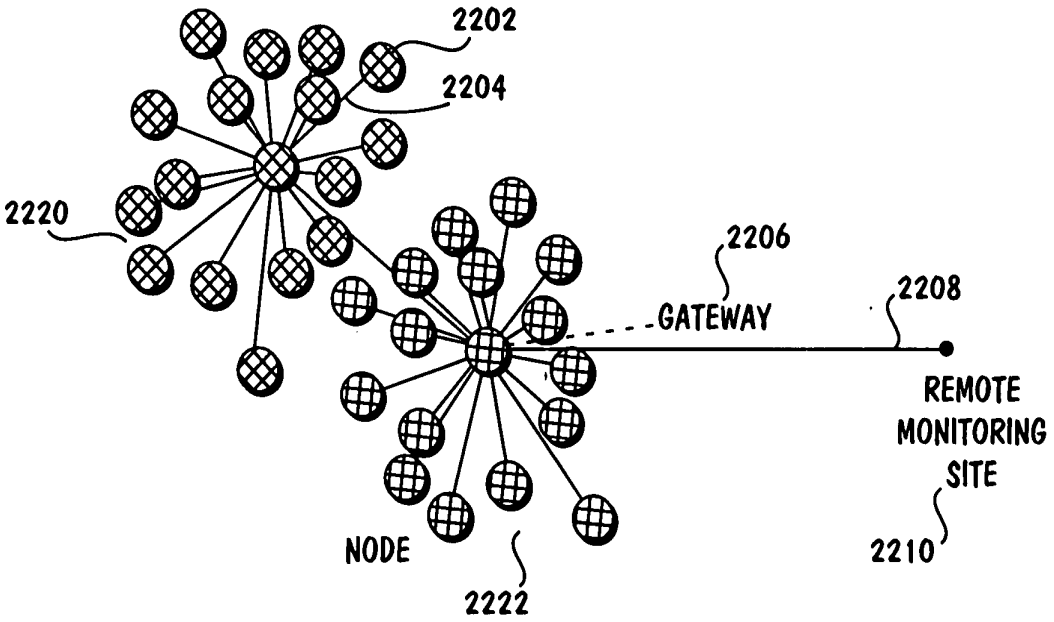

2202
2204
2220
2206
GATEWAY
2208
REMOTE
MONITORING
SITE
2210
NODE
2222

FIG. 22

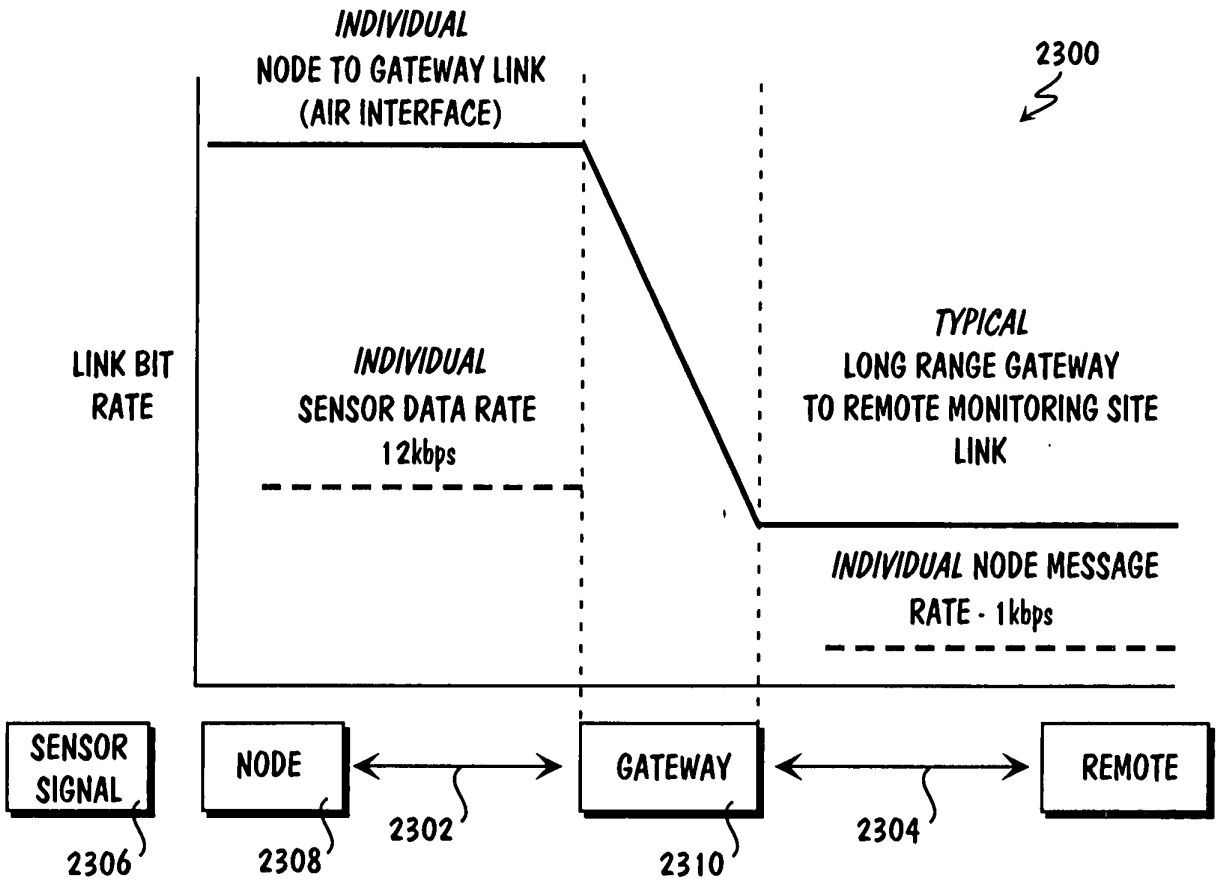

INDIVIDUAL
NODE TO GATEWAY LINK
(AIR INTERFACE)
2300
LINK BIT
RATE
INDIVIDUAL
SENSOR DATA RATE
12kbps
TYPICAL
LONG RANGE GATEWAY
TO REMOTE MONITORING SITE
LINK
INDIVIDUAL NODE MESSAGE
RATE - 1kbps
SENSOR
SIGNAL
NODE
GATEWAY
REMOTE
2306
2308
2302
2310
2304

FIG. 23

00h00F"595h8960

2400

FIG. 24

00h00f"595h896Q

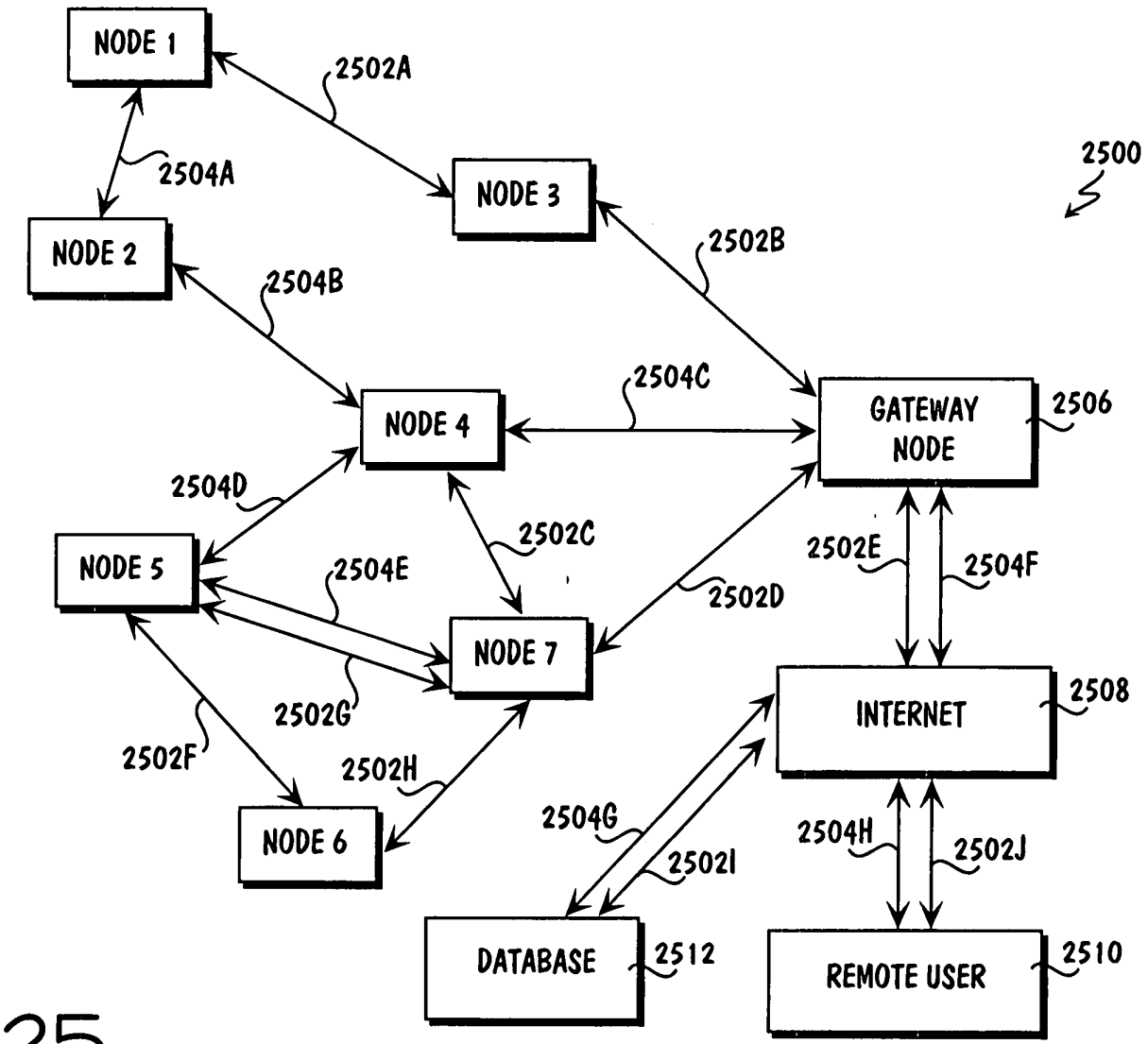


FIG. 25

00h00f" 595h896D

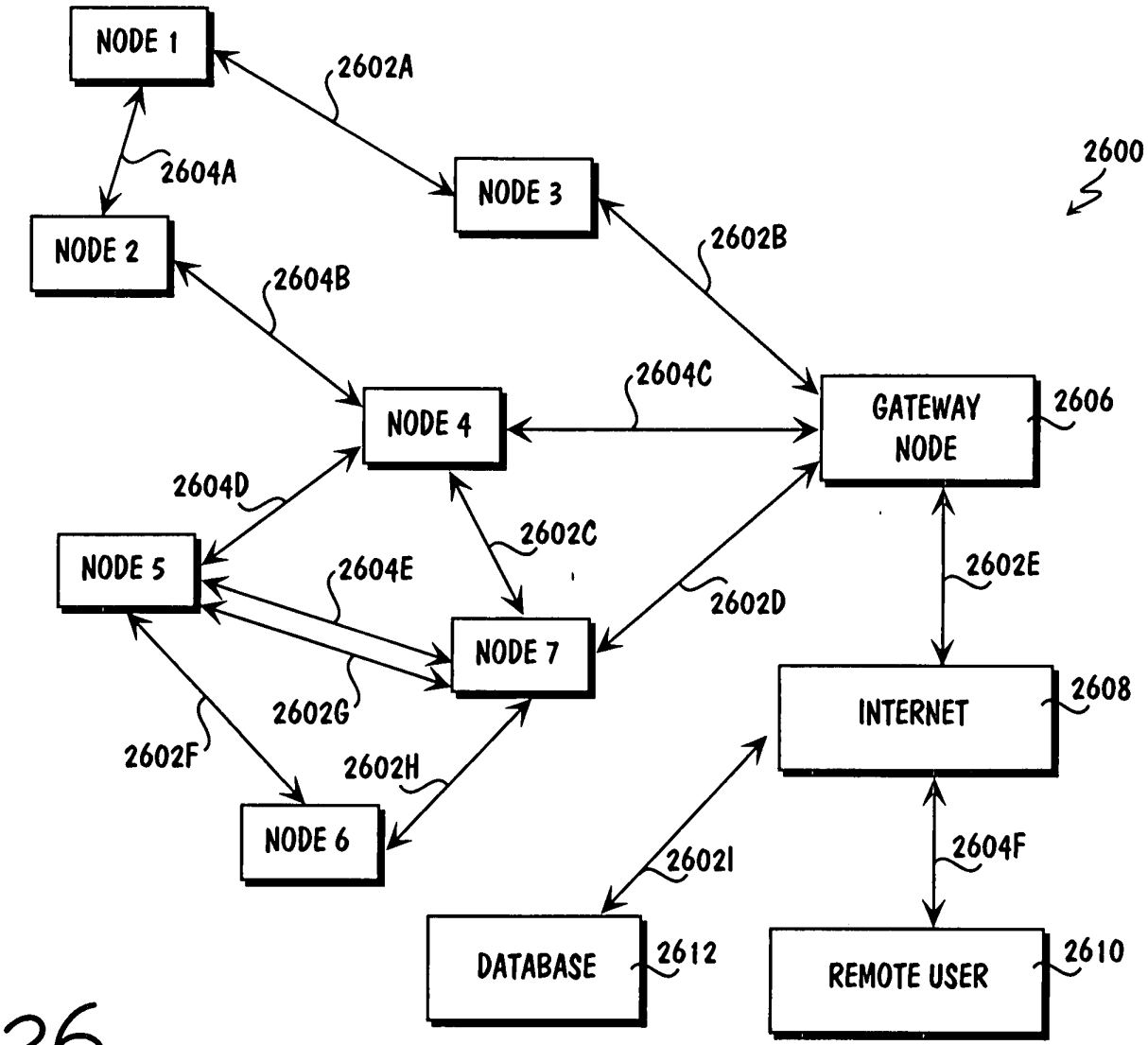


FIG. 26

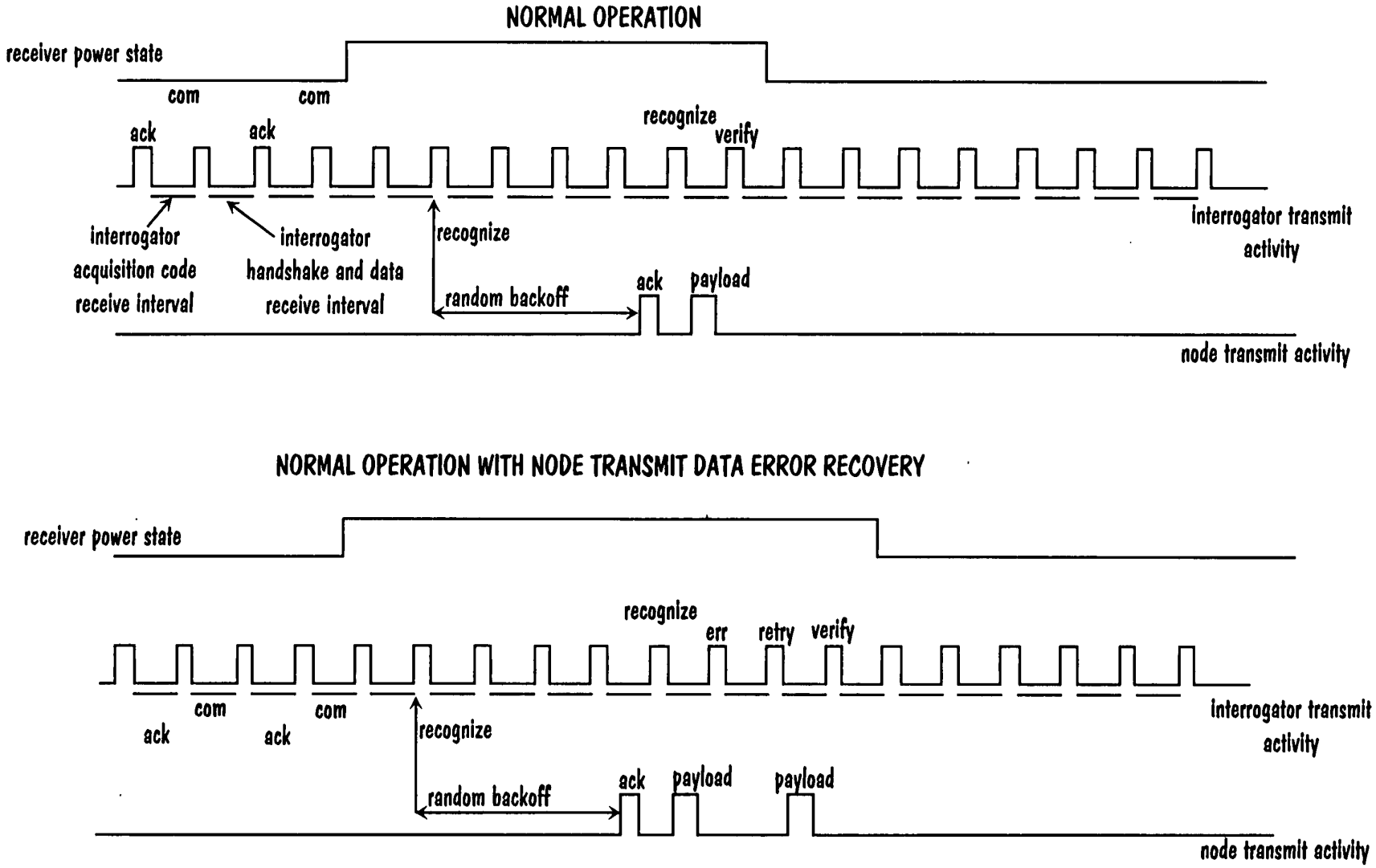

NORMAL OPERATION
receiver power state
com
com
ack
ack
recognize
verify
interrogator transmit activity
interrogator acquisition code receive interval
interrogator handshake and data receive interval
recognize
random backoff
ack
payload
node transmit activity
NORMAL OPERATION WITH NODE TRANSMIT DATA ERROR RECOVERY
receiver power state
recognize
err
retry
verify
com
com
ack
ack
recognize
interrogator transmit activity
random backoff
ack
payload
payload
node transmit activity

FIG. 27

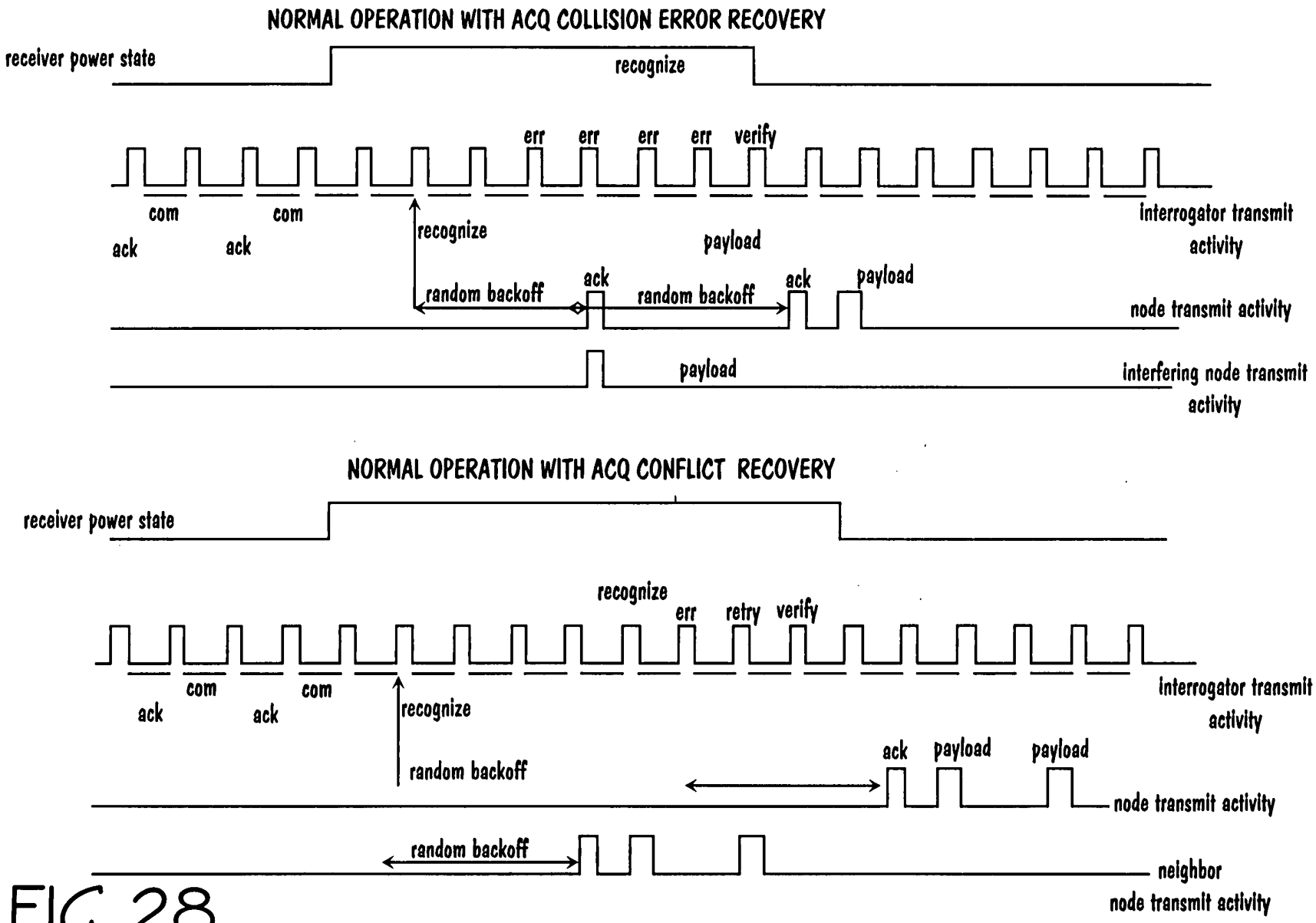

NORMAL OPERATION WITH ACQ COLLISION ERROR RECOVERY
receiver power state
recognize
err
err
err
err
verify
com
com
ack
ack
recognize
payload
interrogator transmit activity
random backoff
ack
random backoff
ack
payload
node transmit activity
payload
interfering node transmit activity
NORMAL OPERATION WITH ACQ CONFLICT RECOVERY
receiver power state
recognize
err
retry
verify
com
com
ack
ack
recognize
interrogator transmit activity
random backoff
ack
payload
payload
node transmit activity
random backoff
neighbor node transmit activity

FIG. 28

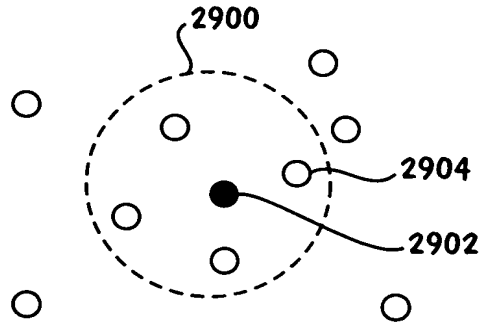


FIG. 29

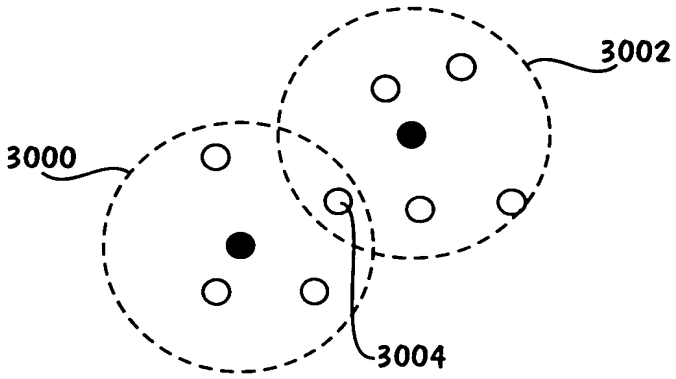


FIG. 30

09684555 - 100400

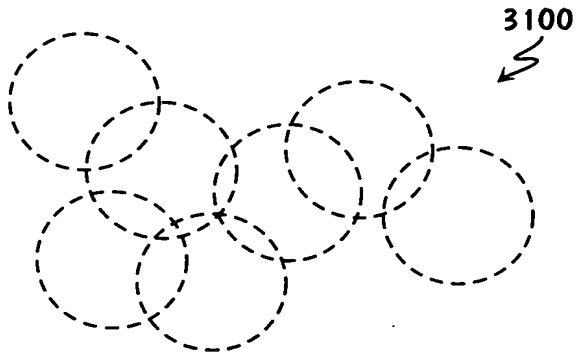


FIG. 31

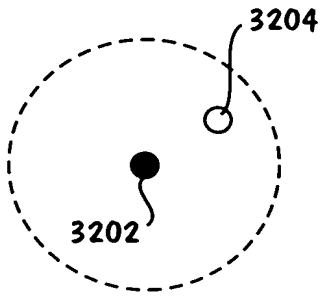


FIG. 32

09656556-100400

09684555-040400

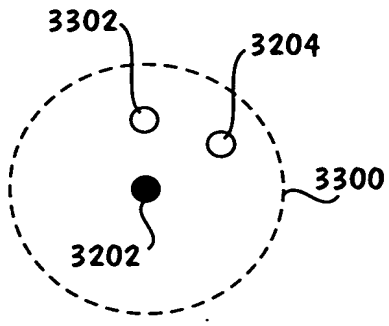


FIG. 33

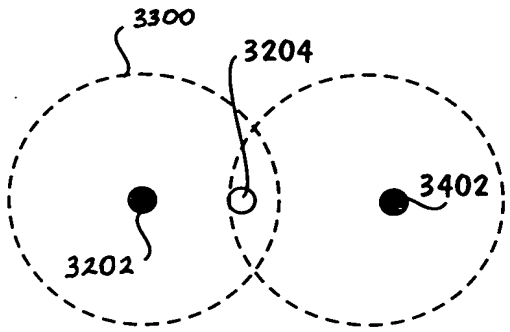


FIG. 34

00h00f"595h3960

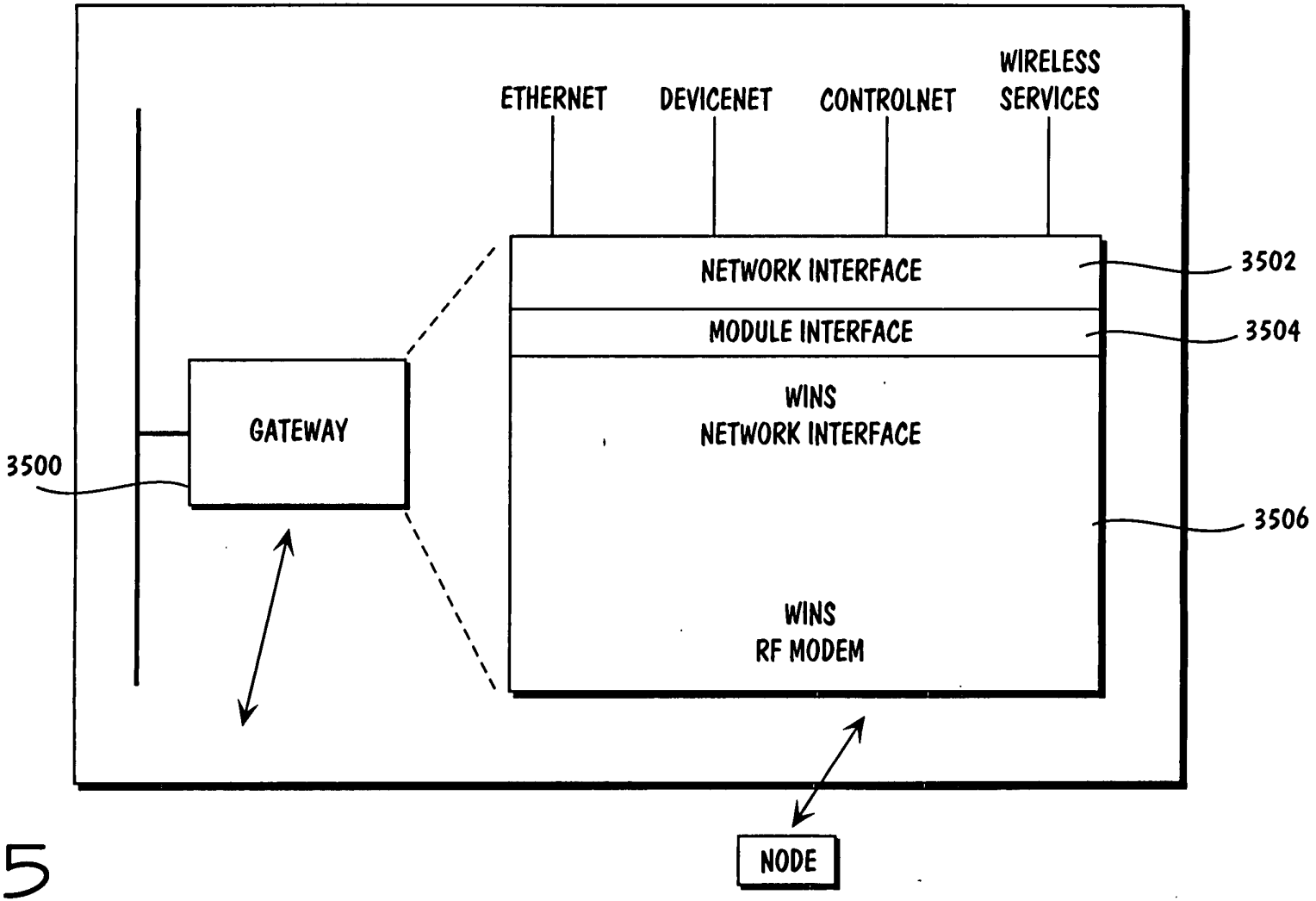


FIG. 35

00h00t"595h8960

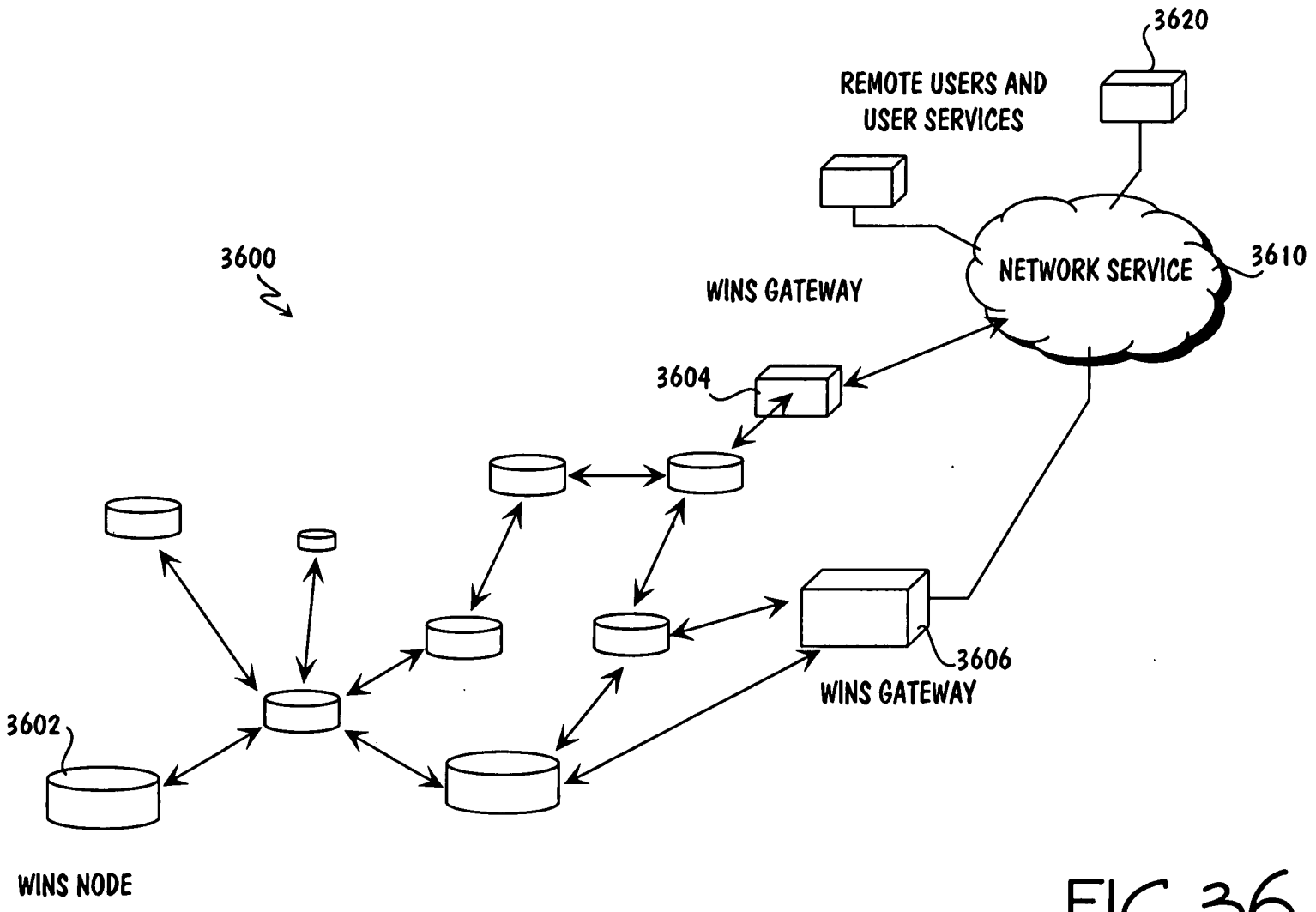


FIG. 36

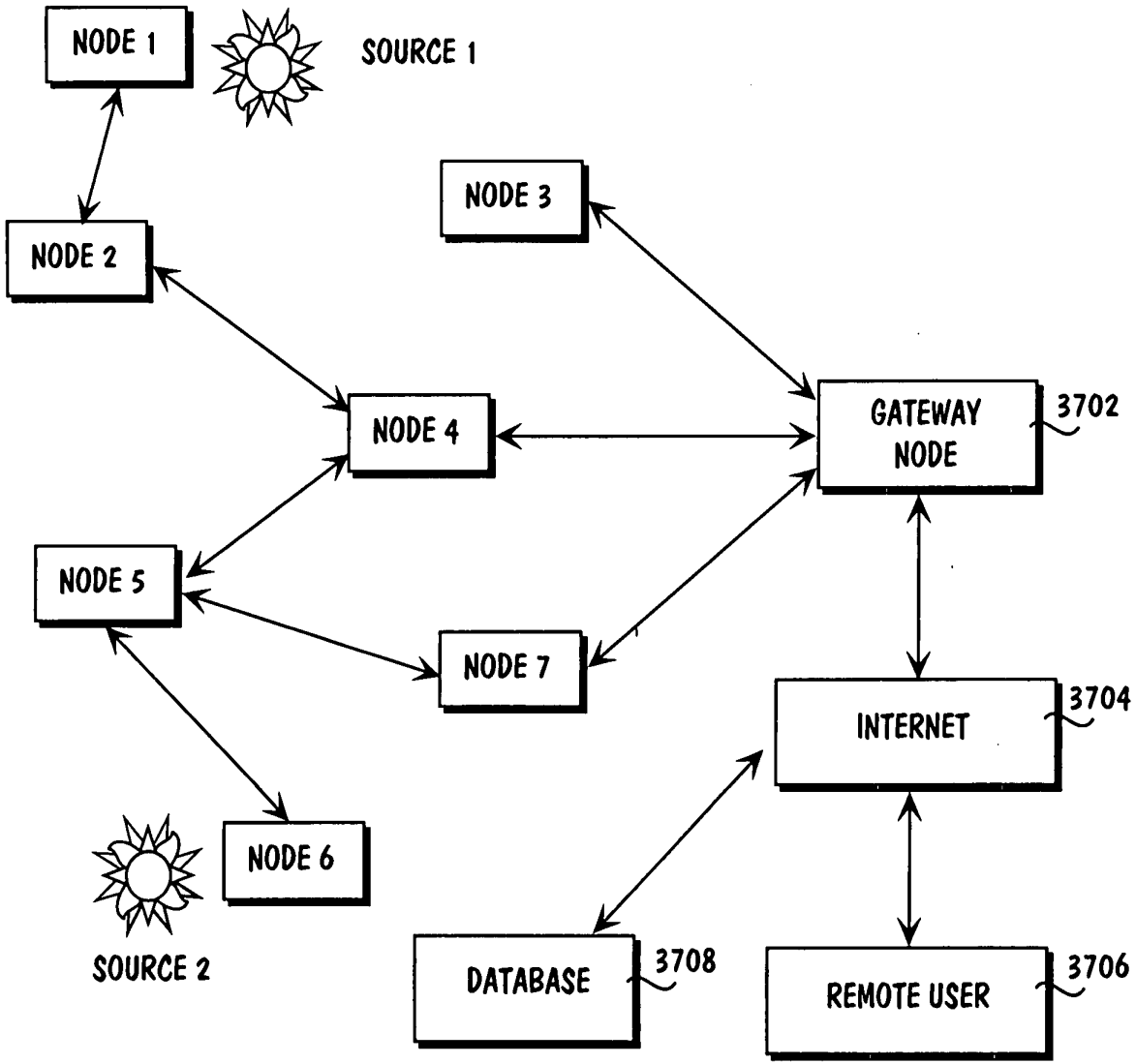

NODE 1
SOURCE 1
NODE 2
NODE 3
NODE 4
GATEWAY NODE
3702
NODE 5
NODE 7
INTERNET
3704
NODE 6
SOURCE 2
DATABASE
3708
REMOTE USER
3706

FIG. 37

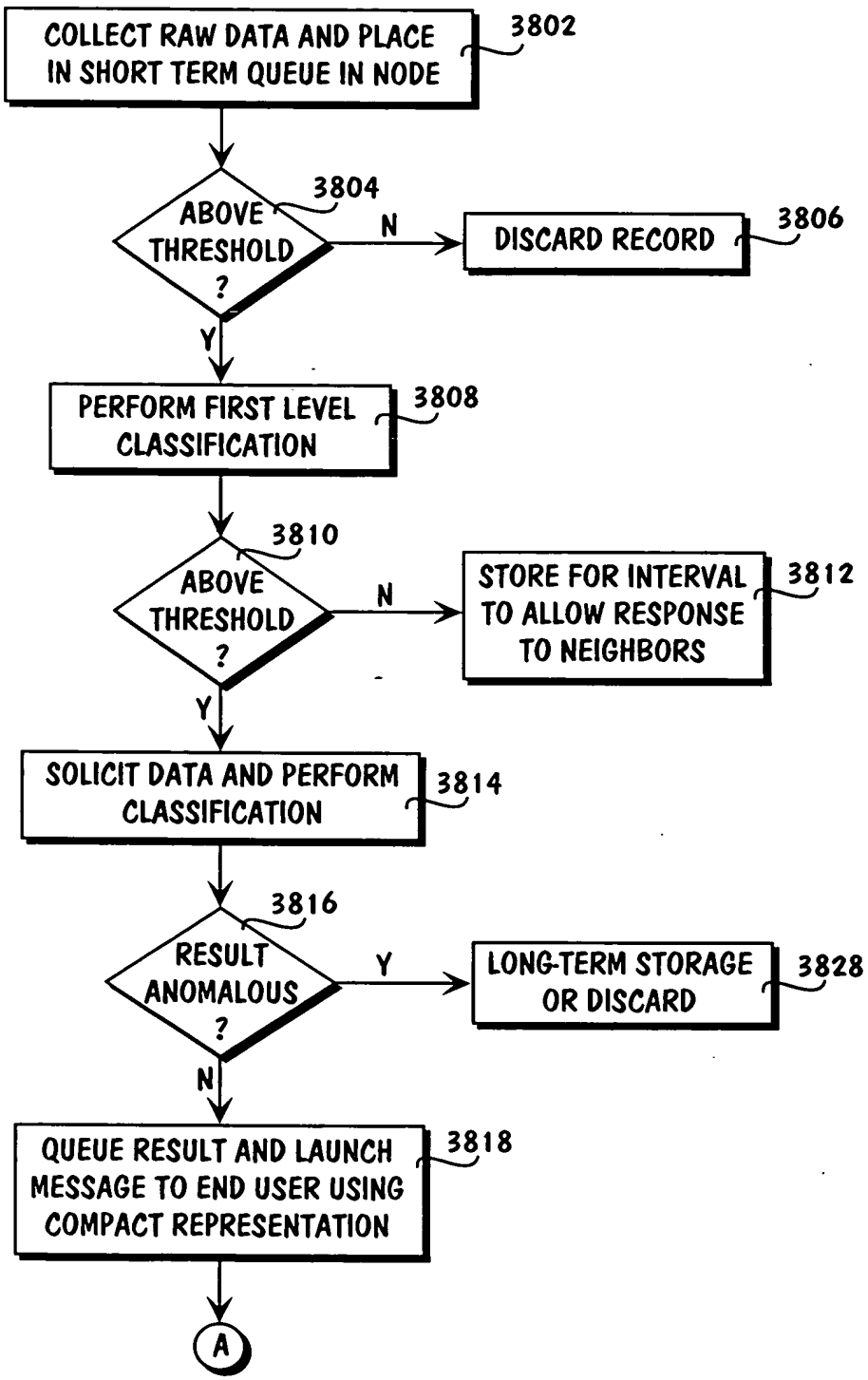

COLLECT RAW DATA AND PLACE IN SHORT TERM QUEUE IN NODE
3802
ABOVE THRESHOLD ?
3804
N
DISCARD RECORD
3806
Y
PERFORM FIRST LEVEL CLASSIFICATION
3808
ABOVE THRESHOLD ?
3810
N
STORE FOR INTERVAL TO ALLOW RESPONSE TO NEIGHBORS
3812
Y
SOLICIT DATA AND PERFORM CLASSIFICATION
3814
RESULT ANOMALOUS ?
3816
Y
LONG-TERM STORAGE OR DISCARD
3828
N
QUEUE RESULT AND LAUNCH MESSAGE TO END USER USING COMPACT REPRESENTATION
3818
A

FIG. 38A

09604505 - 040400

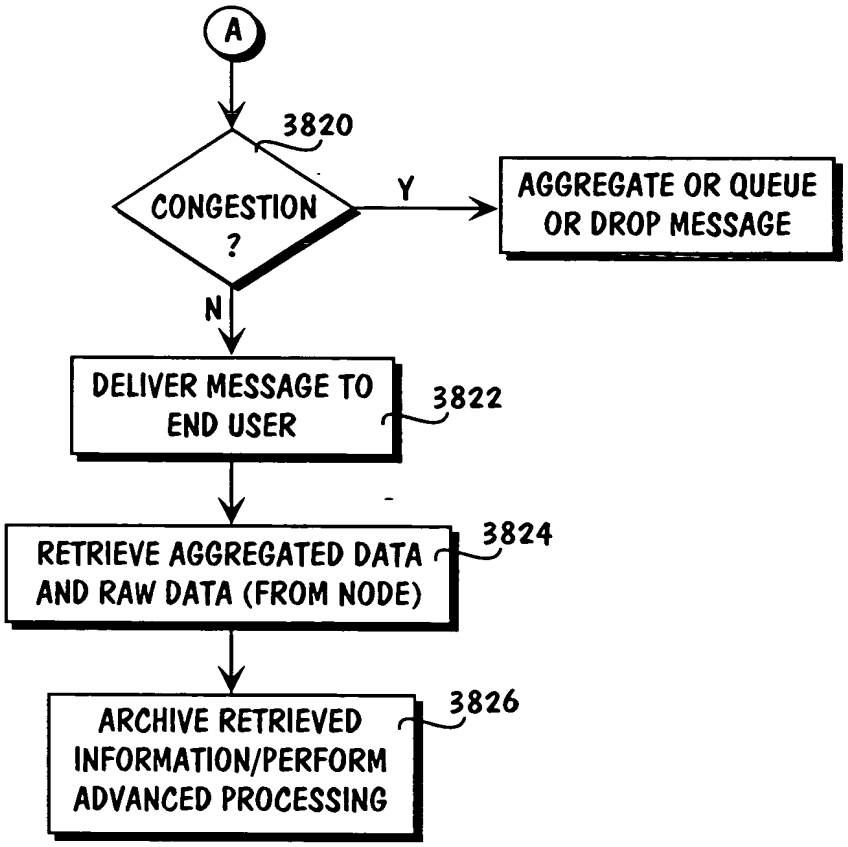


FIG. 38B

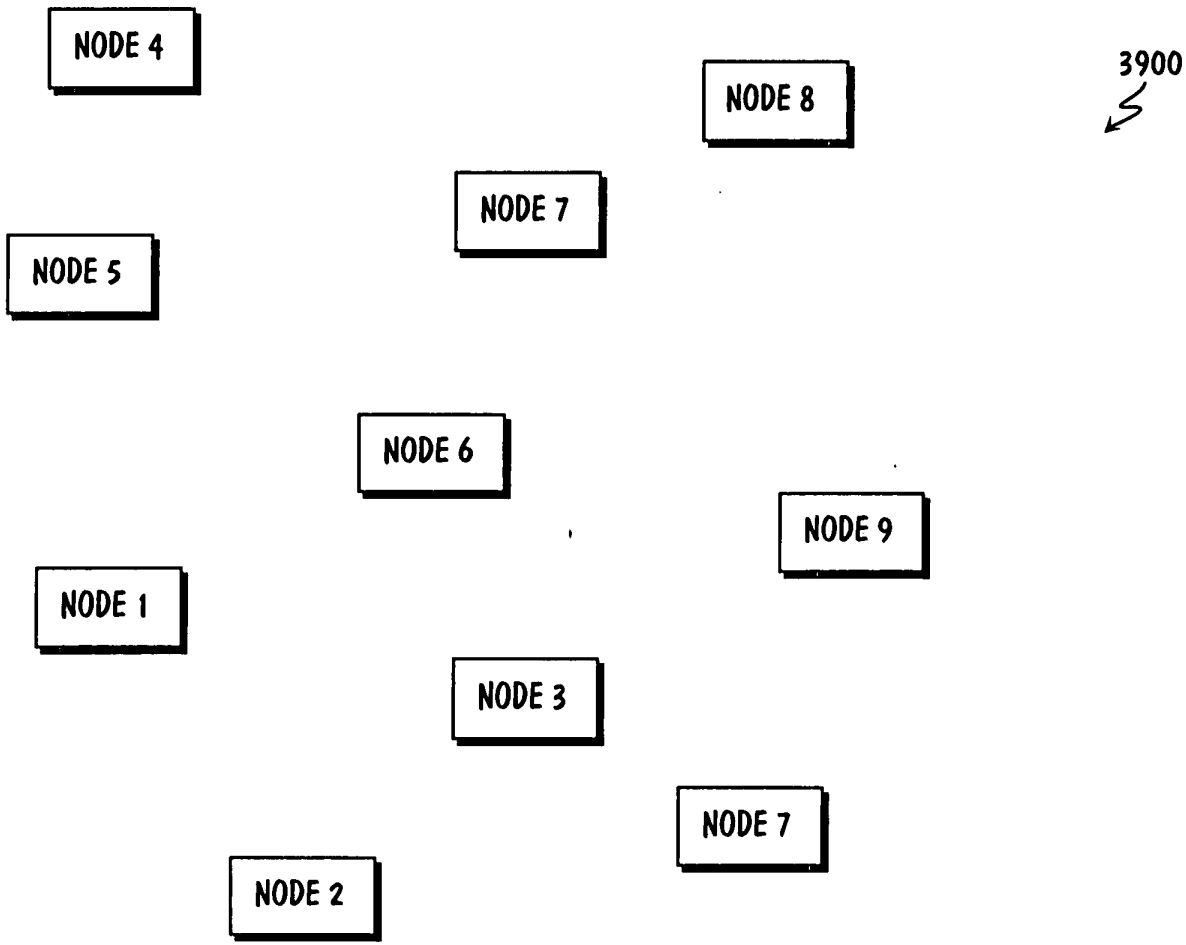

NODE 4
NODE 8
3900
NODE 7
NODE 5
NODE 6
NODE 9
NODE 1
NODE 3
NODE 7
NODE 2

FIG. 39

00n00f" 595n3960

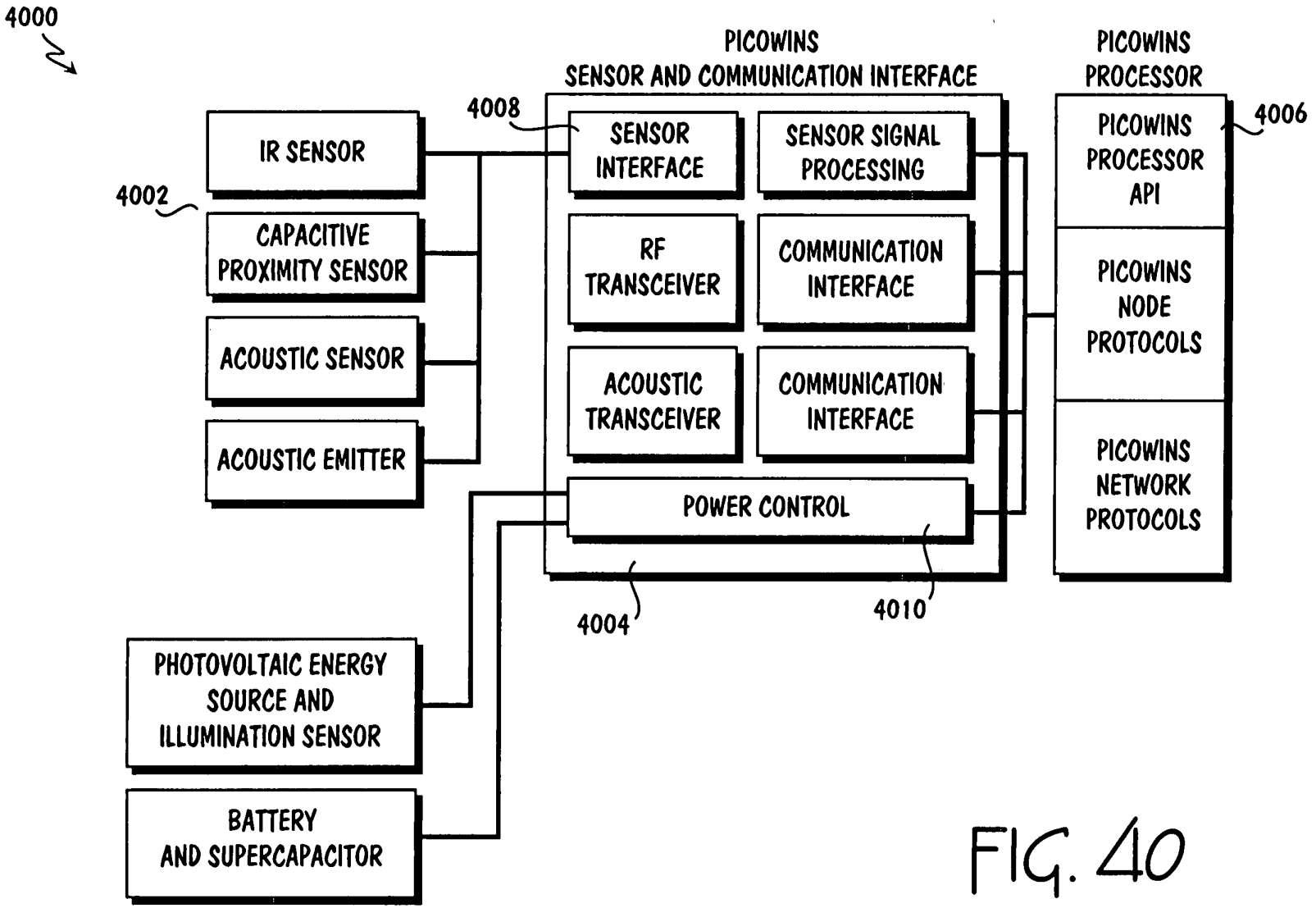


FIG. 40

00h00t"595h8960

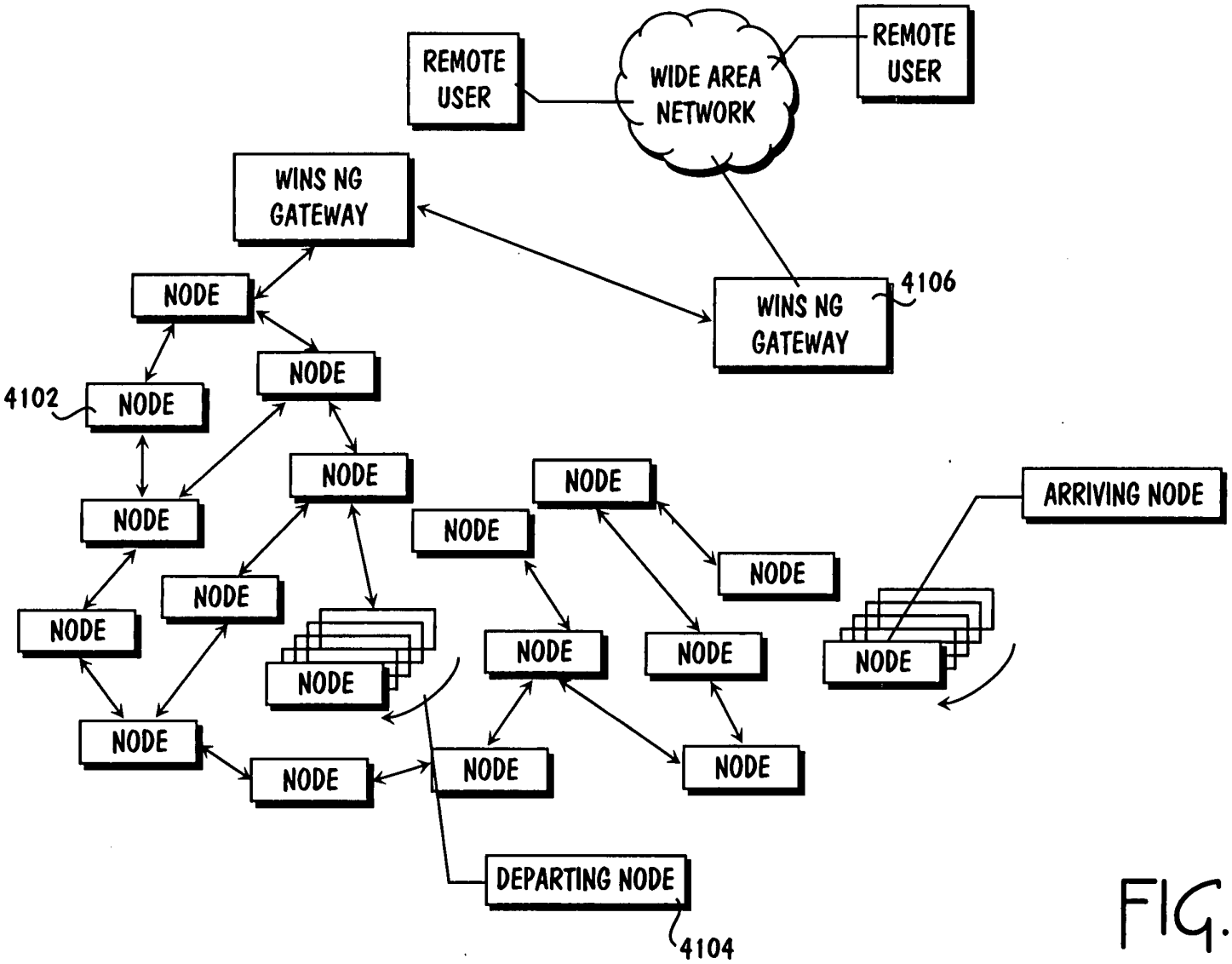


FIG. 41

00+00T" 595h8960

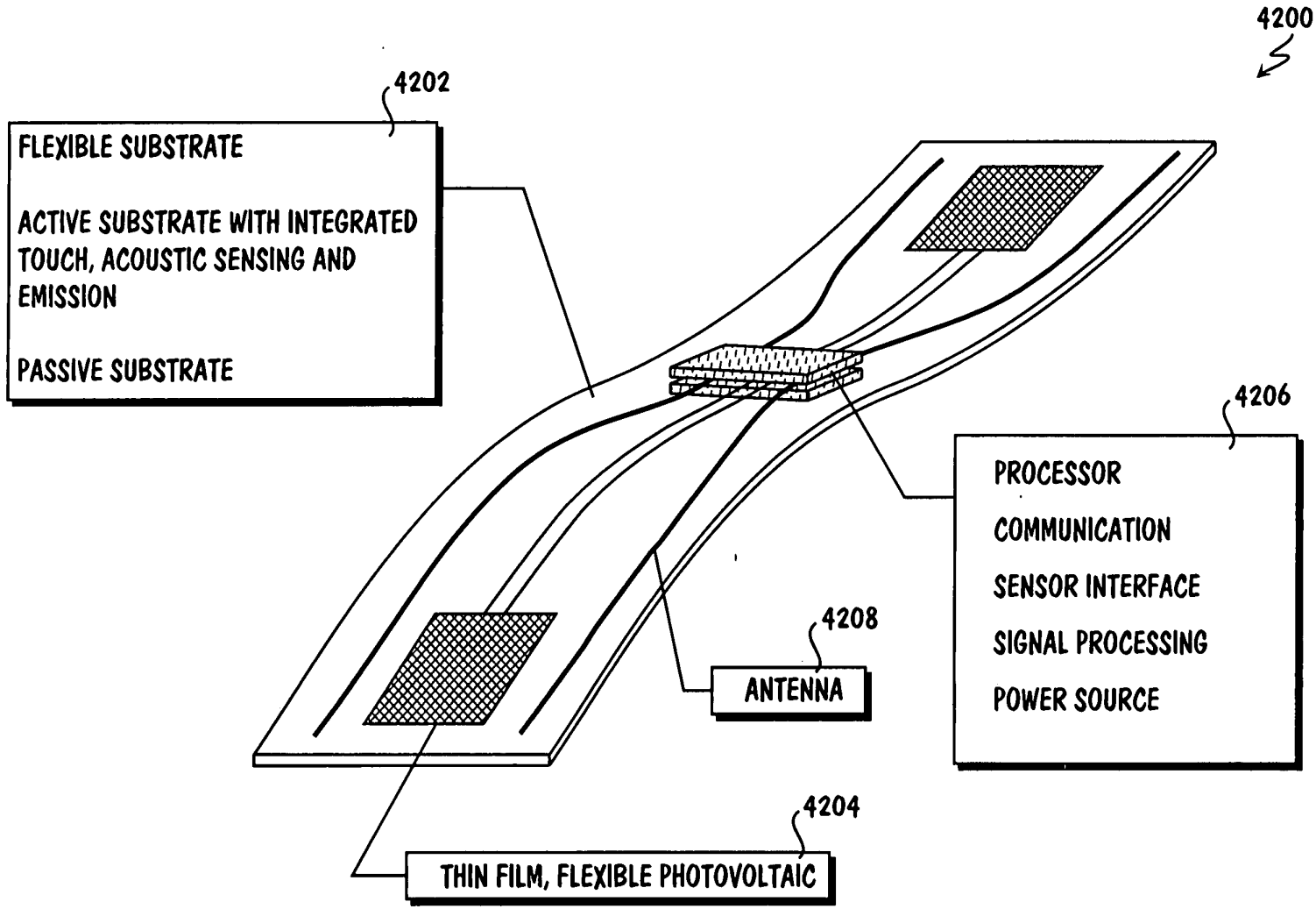


FIG. 42

00h00t' 595h8960

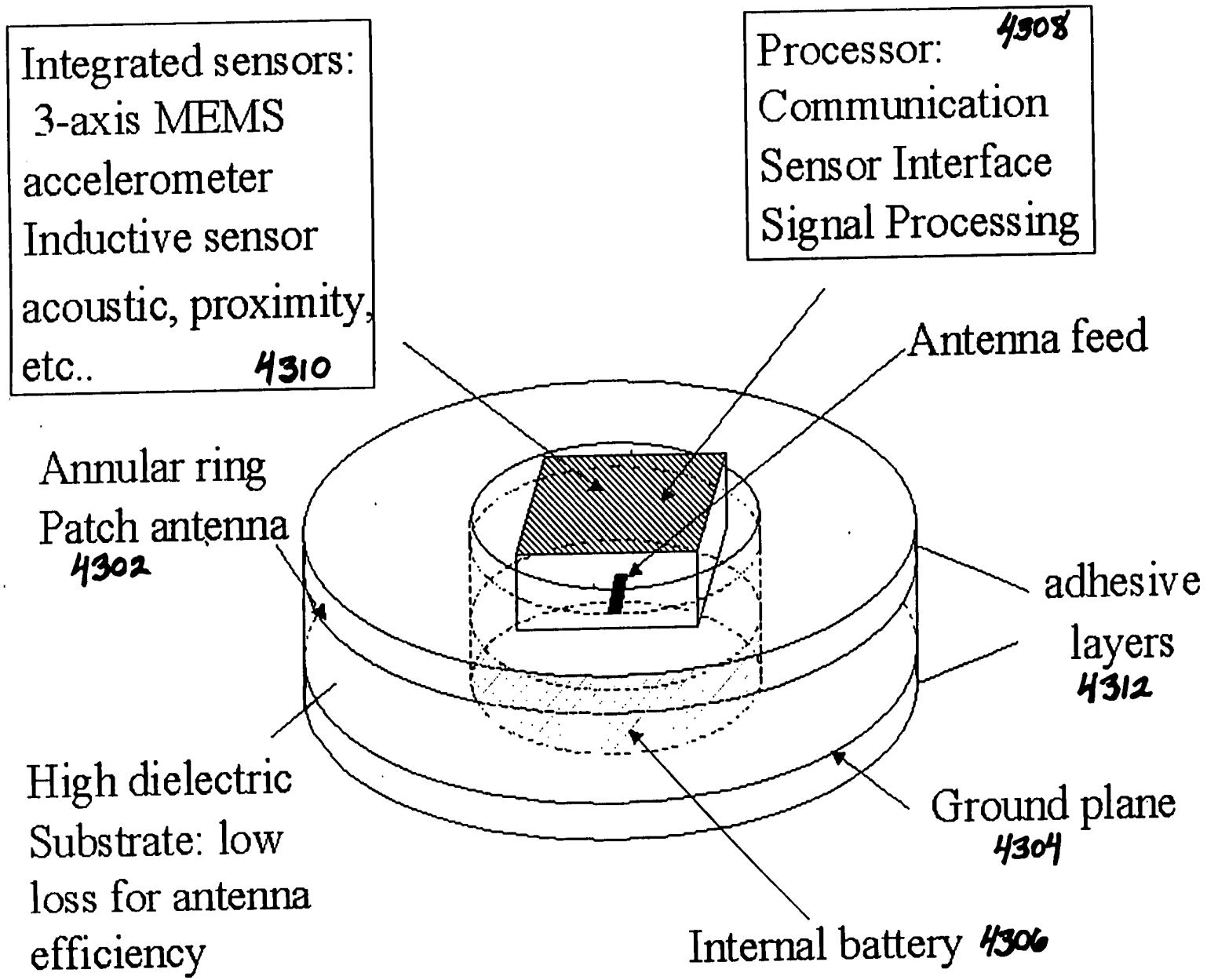
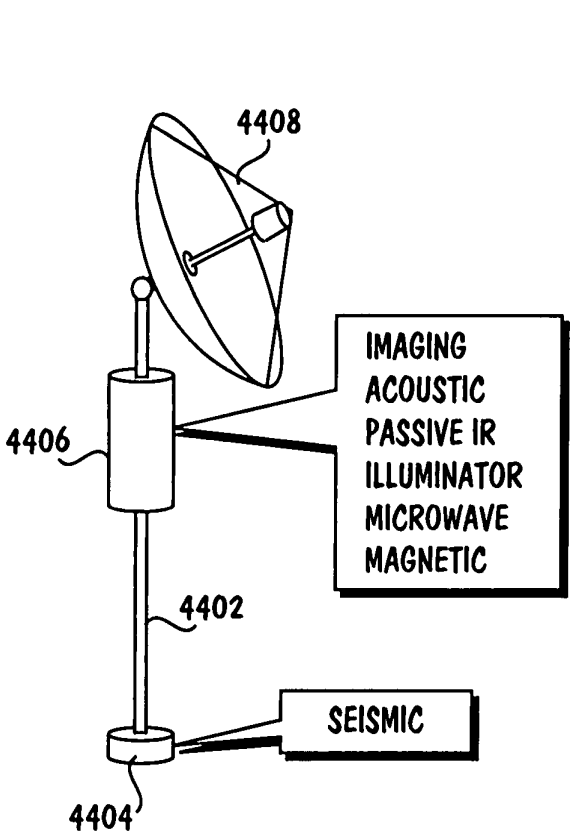


FIGURE 43

00+00T"595+8960



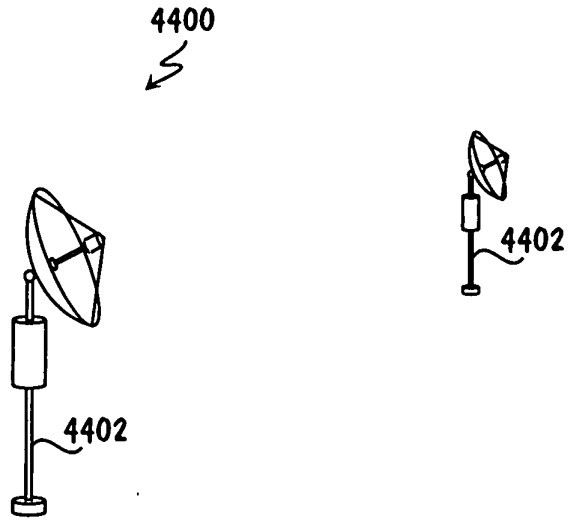


FIG. 44

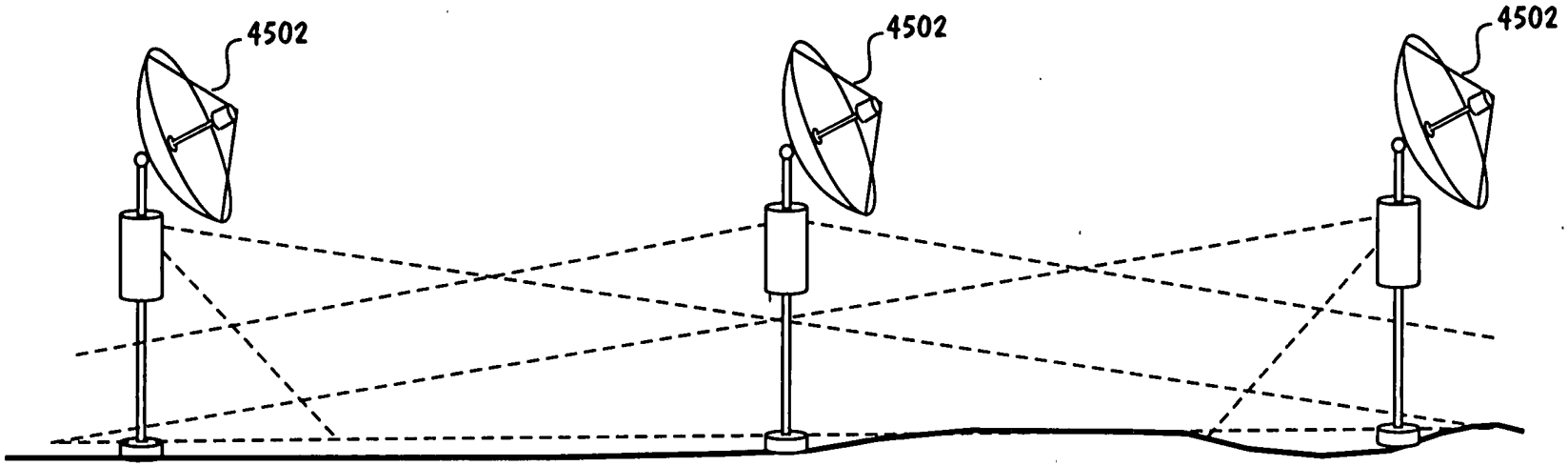


FIG. 45

00+00T" 59S+8960

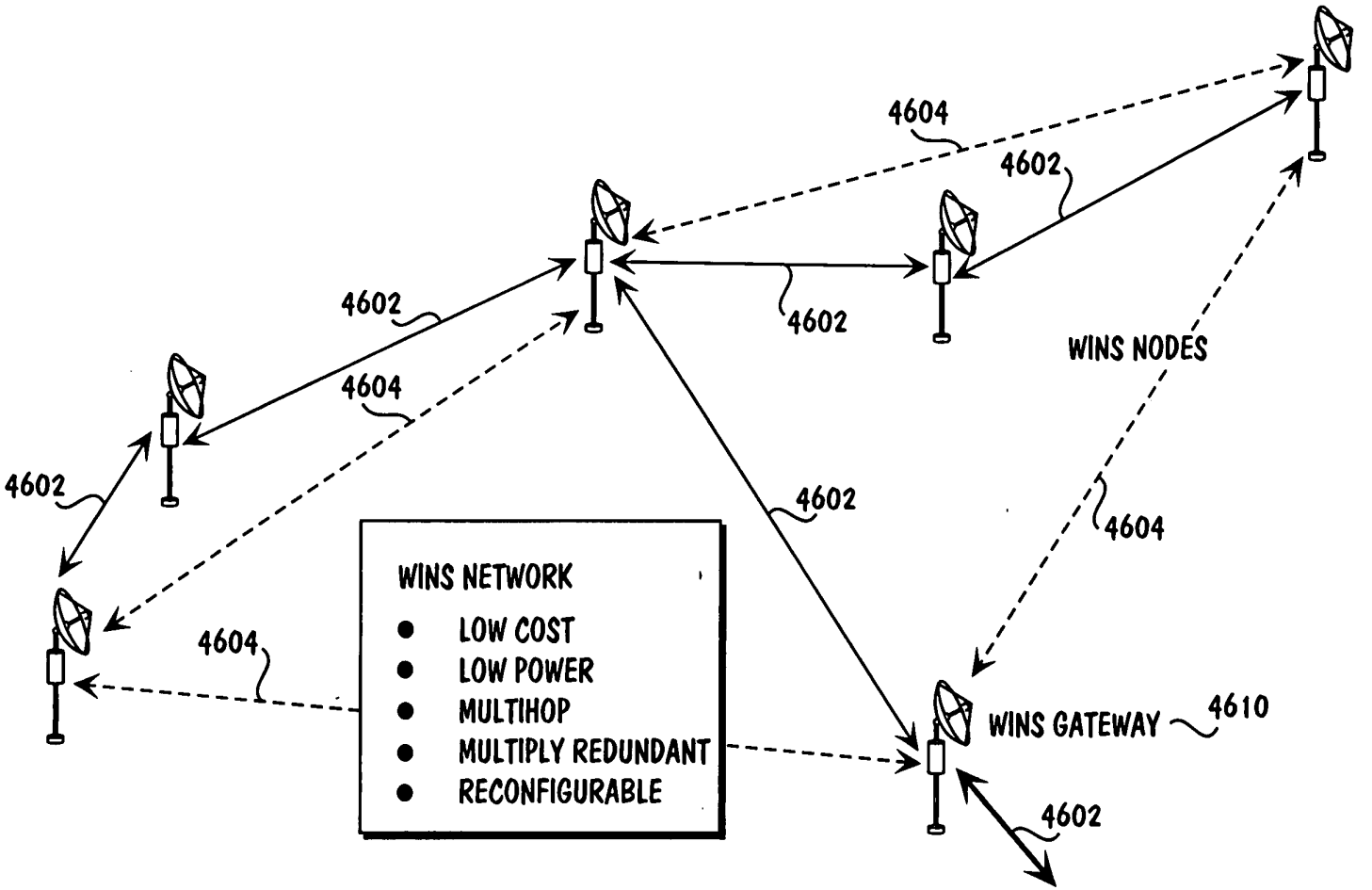


FIG. 46

FIG. 47

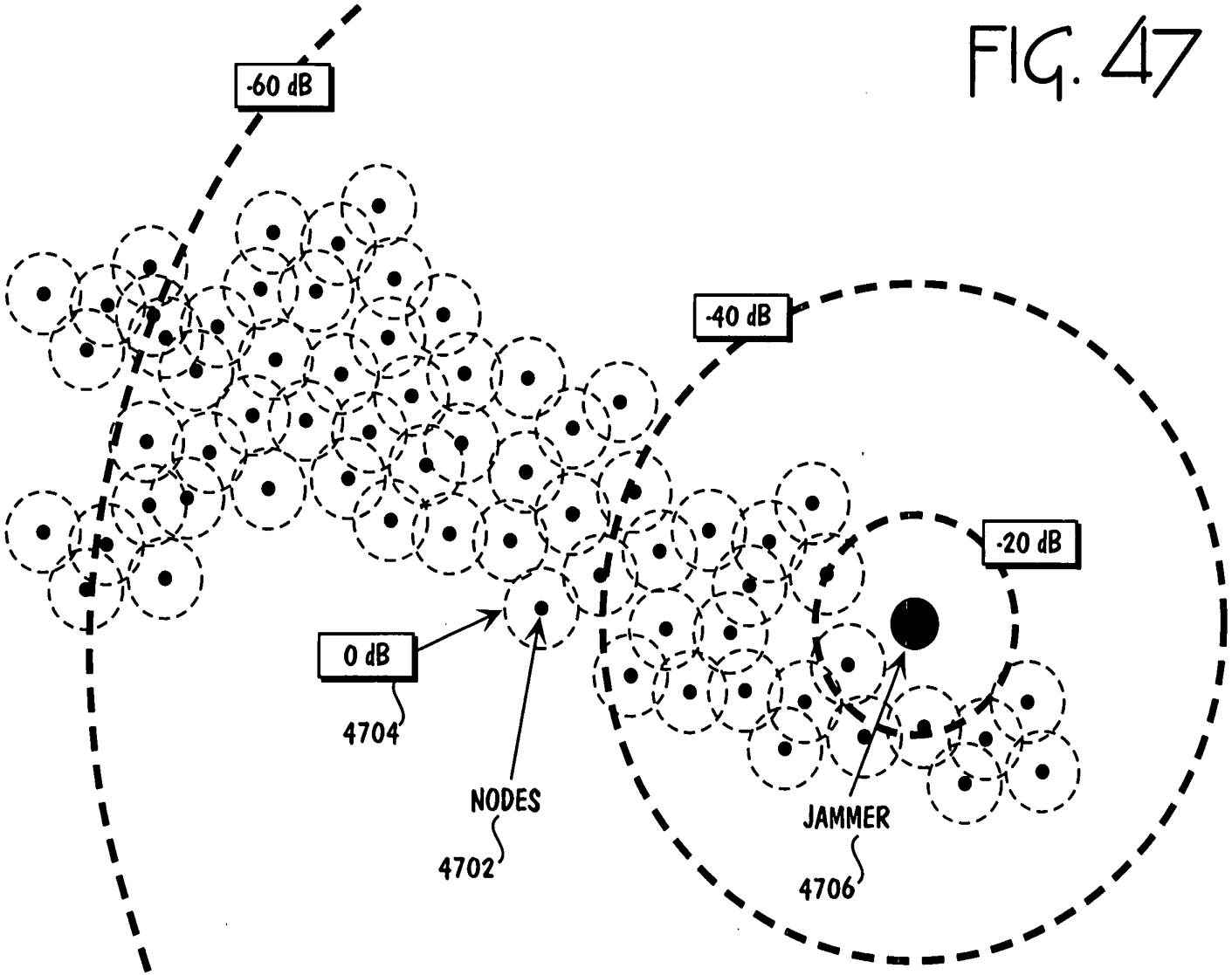
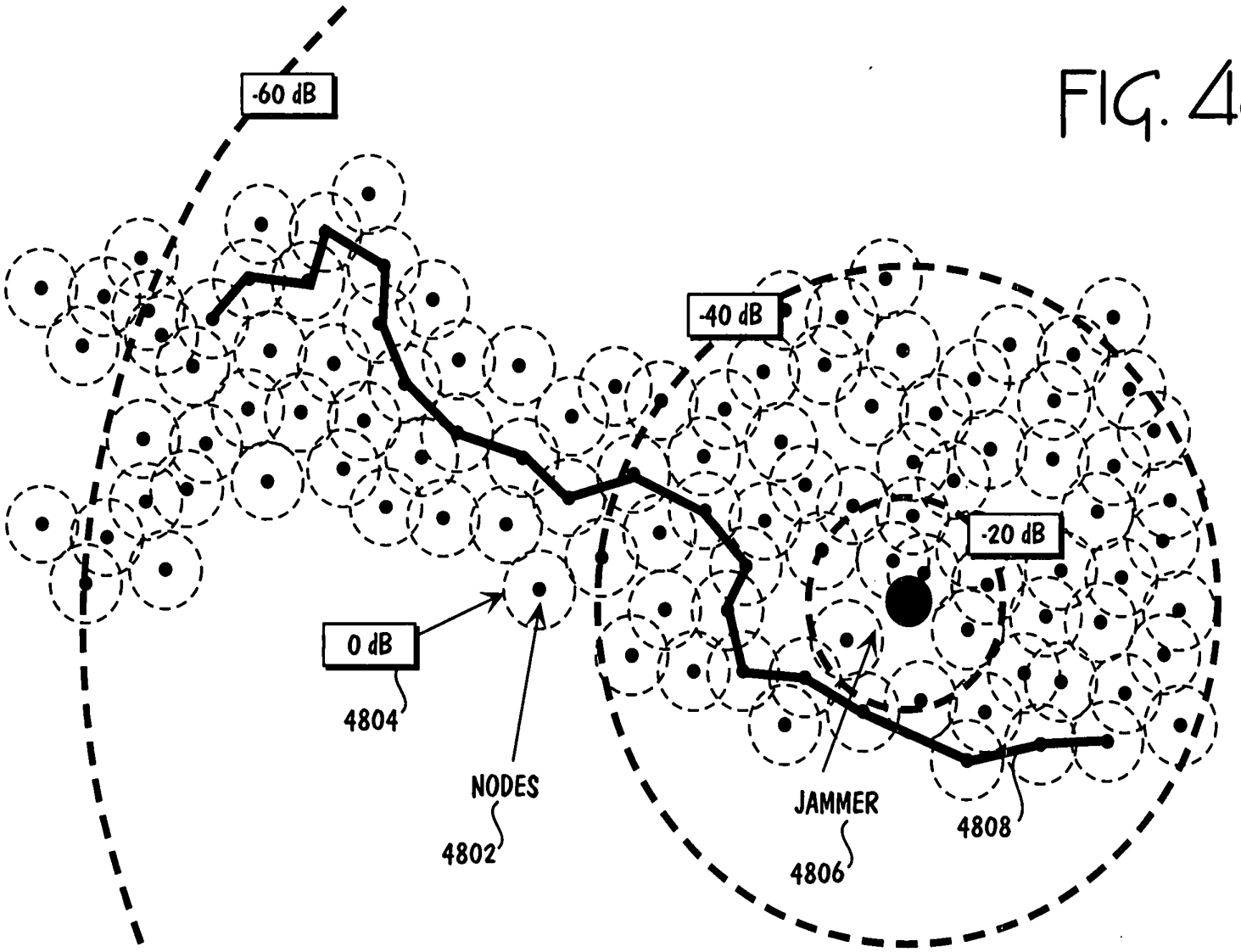
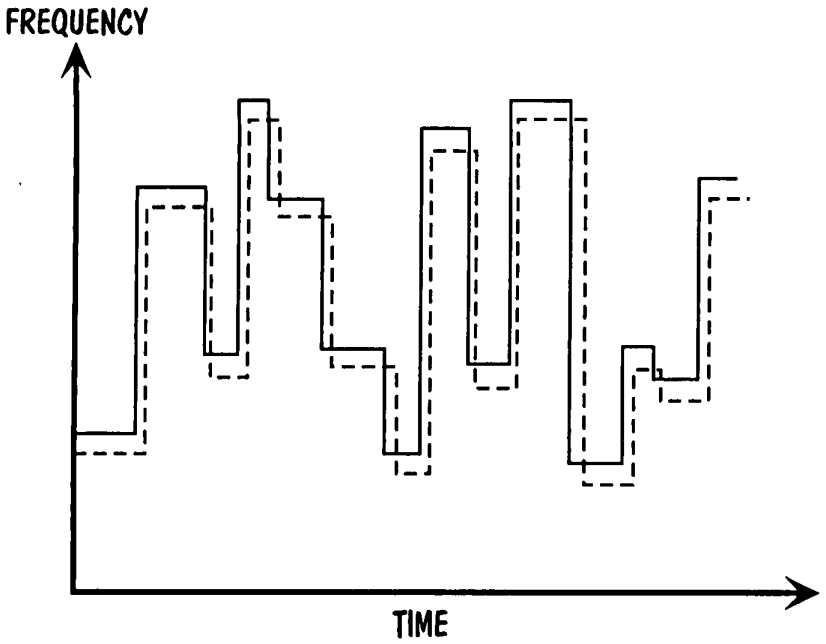


FIG. 48



00h00T"595h8960



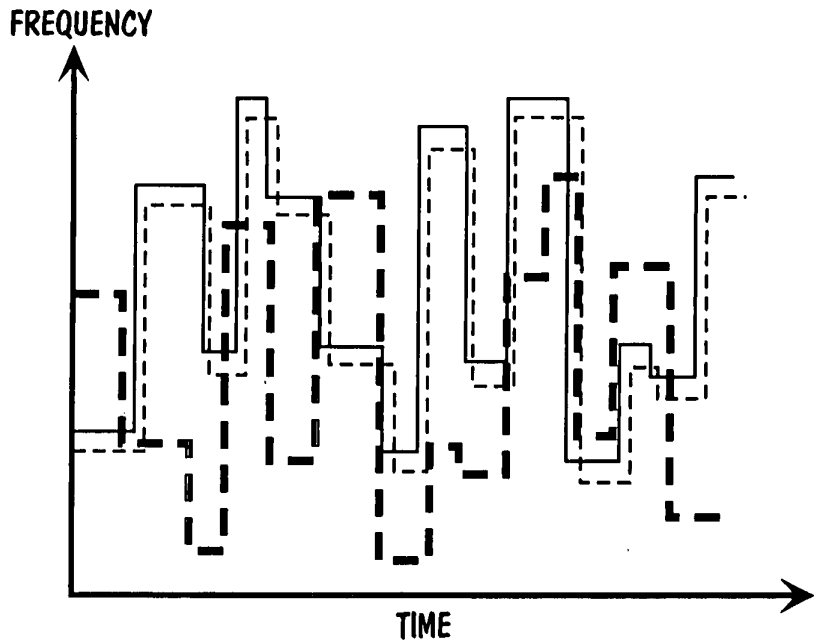


FIG. 49

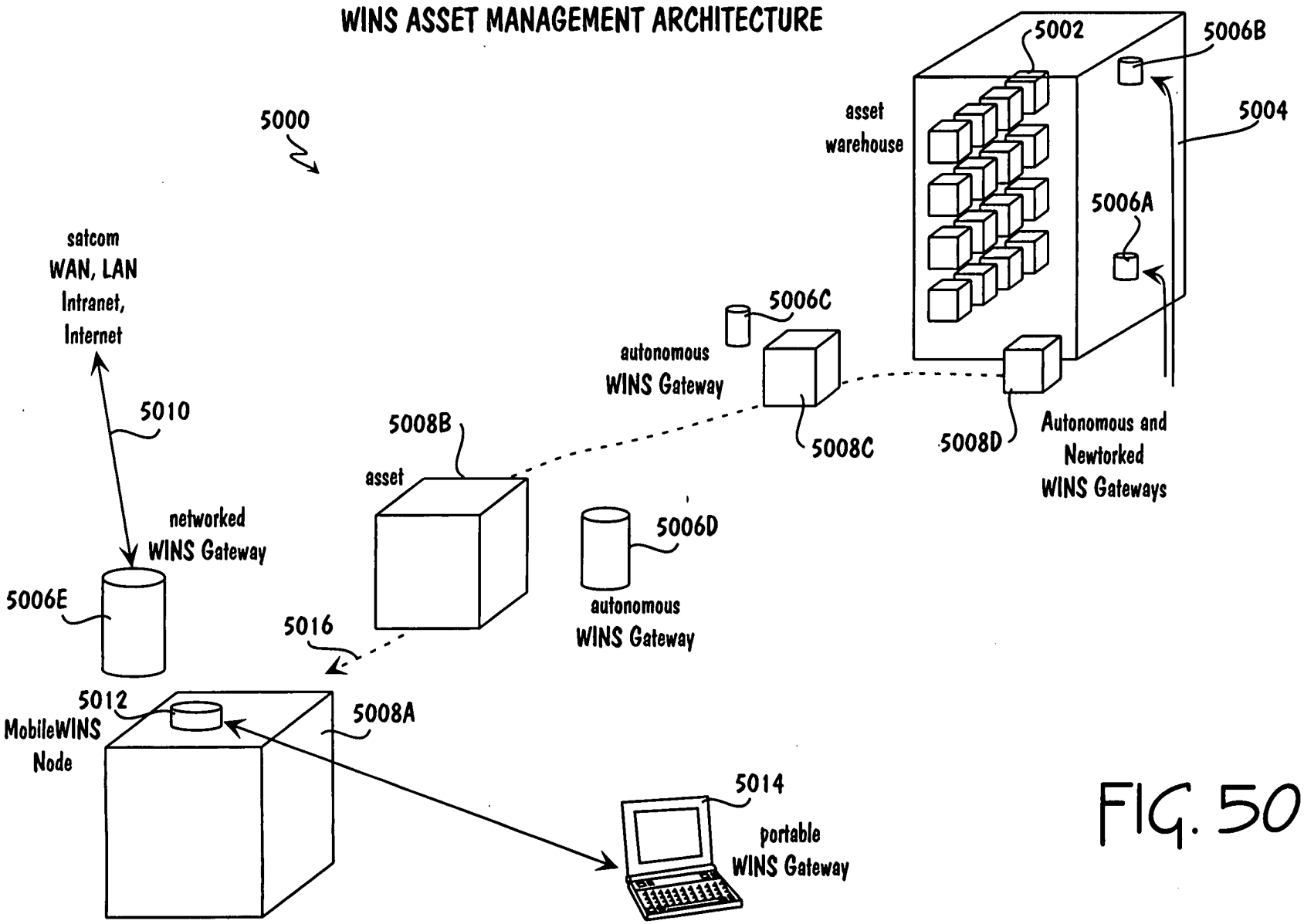

WINS ASSET MANAGEMENT ARCHITECTURE
5000
5002
5006B
5004
asset
warehouse
5006A
satcom
WAN, LAN
Intranet,
Internet
5006C
autonomous
WINS Gateway
5010
5008B
asset
5008C
5008D
Autonomous and
Newtorked
WINS Gateways
networked
WINS Gateway
5006D
5006E
autonomous
WINS Gateway
5016
5012
MobileWINS
Node
5008A
5014
portable
WINS Gateway

FIG. 50

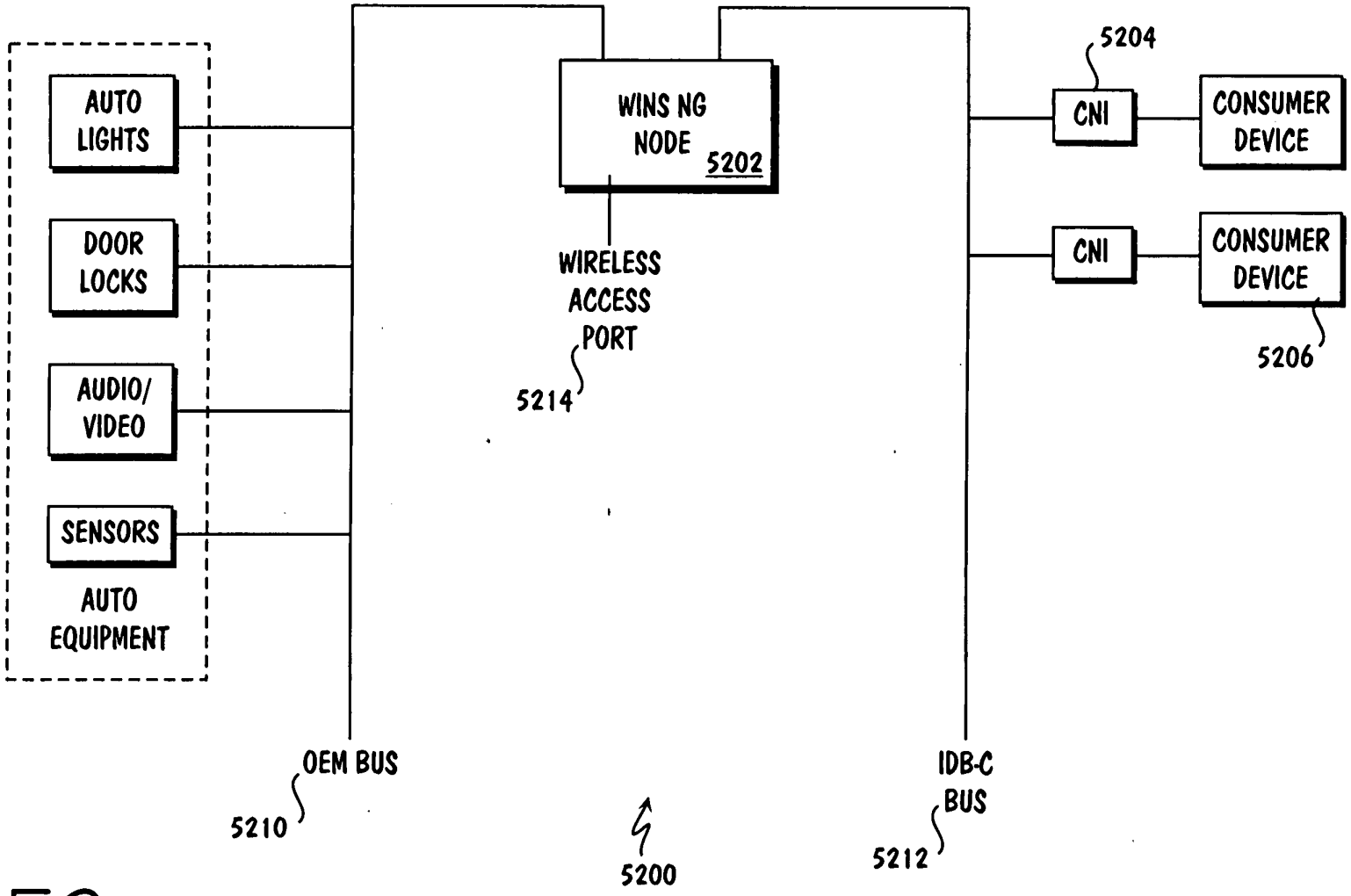

AUTO LIGHTS
DOOR LOCKS
AUDIO/ VIDEO
SENSORS
AUTO EQUIPMENT
OEM BUS
5210
WINS NG NODE
5202
WIRELESS ACCESS PORT
5214
5200
5204
CNI
CONSUMER DEVICE
CNI
CONSUMER DEVICE
5206
IDB-C BUS
5212

FIG. 52

00h00f"595h8960

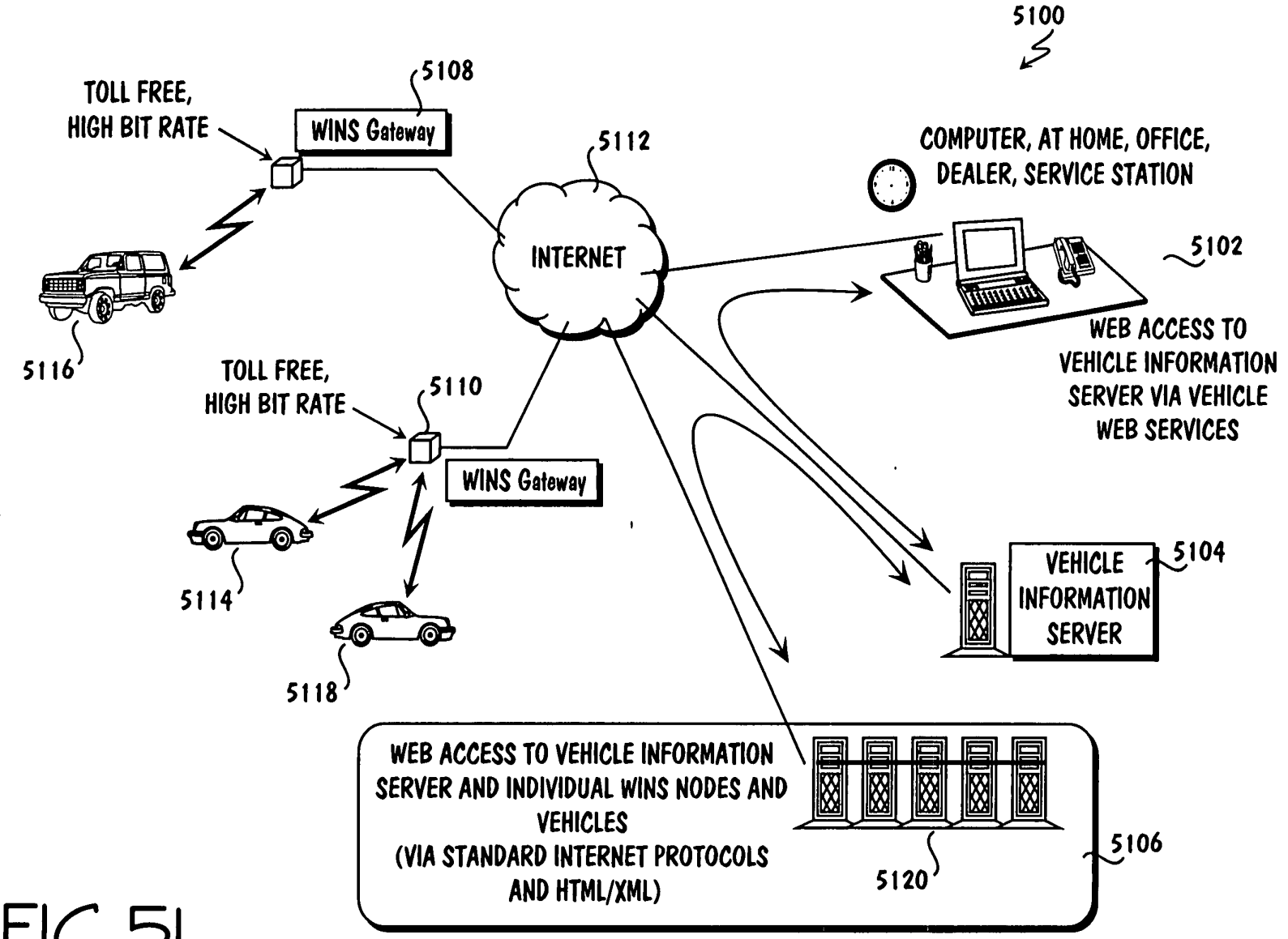


FIG. 51